SYNERGETICS OF ATMOSPHERE AND TORNADO AS NATURAL SELF-SUPPORTED TORUS MECHANISMS

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"This paper was written "at one go", therefore it may contain minor non-critical errors, easily correctable and described with respective comments in future deliverables of the author".

It is not politicians but persons with extra abilities like Victor Schauberger and Nikola Tesla who determine Mankind's fate.

Introduction

There is hardly a man-made machine or a mechanism that has no counterpart in Nature. This is also true for self-supported systems such as energy and information sources, transport vehicles, etc. We all must learn from Nature to reproduce them at a modern engineering level, which can be done by **forced disturbance of the energy-information (information-energy) process of total structurization of a working/fluid medium into its typical natural forms, for instance, a natural self-supported torus mechanism VTortex (Tornado)**.

The current technological level is represented by a pitiful set of retrograde technologies employed in all fields of Man's activities. Vivid examples of this are modern information technologies currently looked upon as super-technologies.

The reasons for such "degradation" are the absence of device technologies with sizes much lower than one atomic layer and information flow rates in such devices much higher than the velocity of light, which is needed for meeting the global vital needs of Mankind today. Given below are only few examples of current "achievements" in information technologies:

- the Windows Vista operating system being nothing but the re-decorated Windos XP OS;
- the cellular phone incorporating previously separate systems;
- the Google navigator partially sparing people from going to libraries, shops, banks, etc.;
- cars incorporating many gadgets, radio, TV, satellite communications, navigation systems, etc.;

- a speaking lavatory bowl stuffed with multiple sensors to analyze the chemical composition of fecal masses, etc.

All these innovations may, for the time being, encourage people to think of themselves with pride as technological progress drivers, but the radical revolutionary change in the level of technologies has never occurred for the last three decades.

A transfer to a new technology level may only occur with the use of Nature's main moving force – the structurization energy and information – that paves the way to the interaction energy and information a small part of which is reflected in Newton's laws.

The new technological level was once reached by such outstanding people as Nikola Tesla (1856-1943), Victor Schauberger (1885-1958) and others.
The largest contribution to creation of self-supporting vortex systems that make use of the structurization energy and information was made by Victor Schauberger (1885-1958).

A Glimpse of History

In 1939, three projects most advanced for hat time were launched in Germany which, if implemented, would have made Germany technologically unrivalled by other highly developed countries including the USA.
All specialists, documentation and samples related to the projects were moved out to the USA in 1945.

The above projects were:
1. The main project, "Vernaton verwafen" ("Weapon of Revenge"), was dedicated to a self-supported electromagnetic vortex and headed by Victor Schauberger (1885 – 1958) (http://www.schauberger.co.uk/, http://www.pks.or.at/menu_en.html), *once an Austrian forester, practical bionics engineer and inventor who due to his forester's activities watched and recorded the following phenomena:*

- *the behavior of water (bundle[4], VTortex, Foam[VTortex]) during its movement in mountain rivers including waterfalls;*
- *development of electricity in river meanders and, especially, in waterfalls;*
- *temperature and pressure differences in water before and after it has flown around objects (stones)*
- *movement of a trout against the current and its ability to overcome waterfalls of over 10 meters in height, etc.*

*On this basis **Victor Schauberger** developed a multiplicity of systems intended for various purposes from free energy sources to flying vehicles (UFO's), see [1,2] for refernce.*
Or, to put it in another way, all design features of self-supported systems were taken by him from Nature observations and converted later to real devices and mechanisms.

The *Vernaton Verwafen* project included the development of a family of flying vehicles whose levitatation capabilities were based on the principles of a controllable self-supported electromagnetic vortex (mini-tornado or an UFO) that did not need HC or nuclear fuel.
The flying characteristics of these flying vehicles completely ignored aerodynamics that ensures the movement of a rotary-wing or jet plane and a helicopter.
Methods of movement, takeoff and landing of flying vehicles (such as UFO's) based on a controllable electromagnetic self-supported vortex were similar to movement, takeoff and landing in space of some insects, e.g. flies that do not need runways, turns in gas medium, barrel-rolls and other aerobatics figures implemented by an aluminum "tube with wings" (Project 2 and alike).
These antigravitation systems were successfully tested but there was already no time to put them into practice since this happened in 1944-1945.

Other vortex-energy-based systems like the "Domestic Station' were sources of "cost free" power for home use and were run by Victor Schauberger in remote mountain areas of Austria where he lived and made experiments before 1939. At present part of these systems resides in Austria in the Victor Schauberger Museum.

Projects of minor importance that supported or rather put a veil on (concealed) the "Vernaton Verwafen" were those based on the use of hydrocarbon or nuclear fuel.

2. The Hydrocarbon Cruise Missile project headed by Wernher von Braun.
After the World War II the project was launched in the USA and other countries. The project is still active (big and small Shuttle vehicles) but it has almost exhausted its potential by now.
These flying kerosene-fuelled aluminum tubes looking somewhat like steel pipes used for transportation of hydrocarbons have spoilt the Earth's atmosphere with their poisonous exhausts while primitive pipelines made a mess of the Earth's surface.

3. The Nuclear Weapons and Stations project headed by Robert Oppenheimer.
After WWII the project was launched in the USA and has been continued into our time.
At present nuclear weapons and stations are a "wound-up trigger mechanism" which may snap into action any time to release radiation that will kill all life on the Earth.

As a result of strong competition in activities carried out in Germany (1939-1945) and the USA (1945-1958), Projects 2 and 3 won.
In 1958, when deceived for the *n*-th time by an American power producer X, Victor Schauberger, unable to bear it any longer, died carrying away with him all technological secrets and the very belief in the feasibility of a controllable self-supported tornado.
He did not leave any worthy students, while his successors got under the wheels of a "pseudo-science fighting machine" created by "winners" promoting hydrocarbon and nuclear power like the above-mentioned X corporation who

- most likely, hid all the documentation and working models and samples; and
- did not understand working principles of Schauberger's systems and failed to reverse engineer them.

As a result of those events, Mankind took a wrong path whereas hydrocarbon and nuclear "winners" with their science-and-technology potential of a "primeval bonfire" have exhausted themselves but still continue to defend their interests actually promoting the third world war.

The look at the recent history is needed to remind us that "the unknown free energy" was once produced in reality but after 50 years of extensive usage of hydrocarbons **the main energy for Mankind has been just forgotten**!

Therefore it is very important for the author to make an attempt to explain the functional features of a tornado, particularly the processes of its activation and reaching the self-support mode, in terms of torus technologies and elastic mechanics based on the effect of the omnipresent structurization energy and information unfamiliar to Victor Schauberger [3-6].

Moreover, it may be worth while to remember **Buckminster Fuller** (1895–1983), an American architect, bionics expert, **engineer** and inventor who created a scientific field "SYNERGETICS" [7] in a book of the same name made a sketch called "Involution and Evolution" describing natural and man-made "tornadoes" and made the following remark to it: *"physical phenomenon — ... A principle operating utterly independent of any physical medium..."*

The same picture shows:

- the central part of the **VTortex,** and
- the torus knot (2.3), the right-hand Trefoil,

in the form of interlaced individual soft threads and bundles of such threads.

In other words, Fuller either did not fully understand the tornado (VTortex) structure or did not have time to describe these processes and only put a problem to be solved.

The research and engineering direction "Torus Technologies and Elastic Mechanics" and, specifically, studies of toroidal, Mobius-shaped and other forms, the so called Color Cells[1,2,3,4,5,6,7], are probably an attempt to fill this gap [3-6,14,17,18].

This knowledge (namely, torus technologies and elastic mechanics), so far little known to the world scientific community, makes an intellectual synenergetic framework of any VTortex galaxy, tornado and alike, serving as the basis for their

- activation,
- structurization,
- self-supported existence,
- destructurization (disintegration).

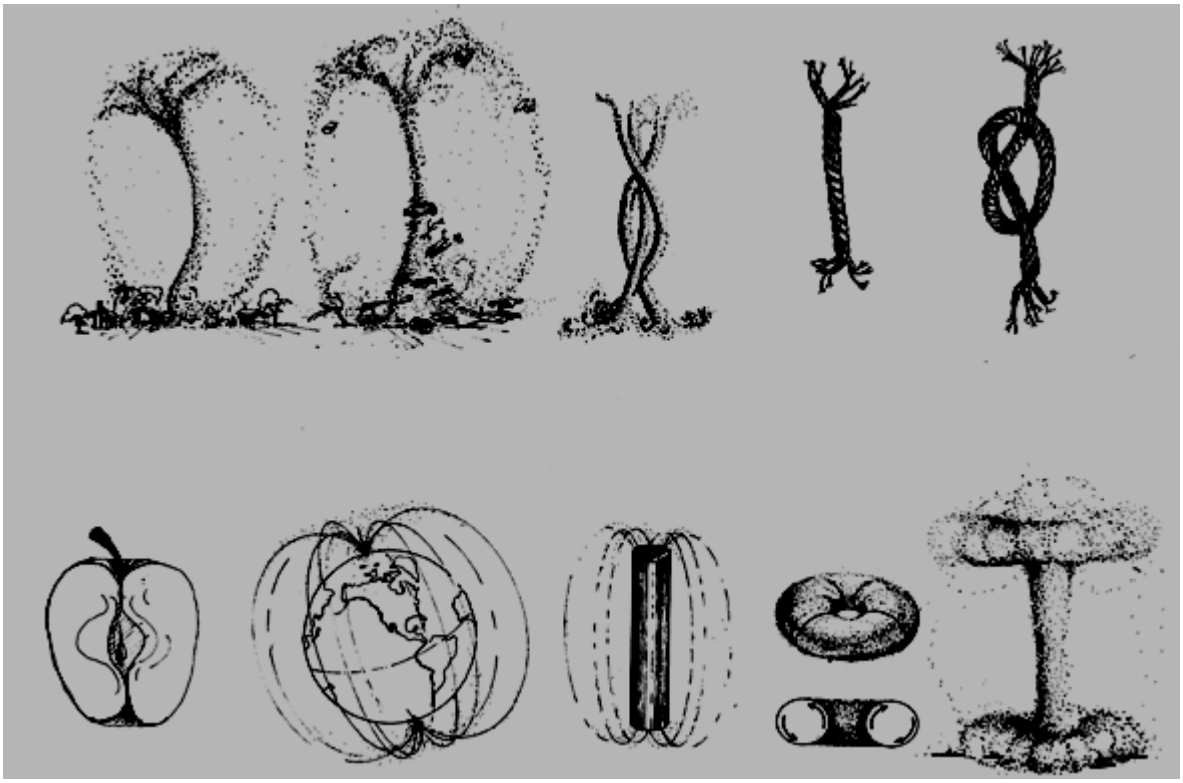


Fig. 505.41 «Involution and Evolution» from [7], ***"Courtesy, The Estate of R. Buckminster Fuller",*** *October 2008: California, Santa Barbara – Illinois, Chicago*

The permission to use this picture was kindly granted to me by ***John Ferry****, the curator (Owner) of* ***the Estate of R. Buckminster Fuller – EBF.***

The Tornado as a Natural Self-Supported Torus Mechanism

The traditional knowledge of tornadoes as self-supported or self-structured natural systems (VTortex systems) is split into two parts:

- **Part 1:** Repeated functional features and real tornado-related practical data available in publicly known information sources, e.g. in [8, 9] where they are described as "black boxes".
- **Part 2:** Multiple theories, mathematical models, hypotheses and ideas that **are not based on functional featurs of toroidal movement, torus technologies and elastic mechanics** [10-15], i.e. not consistent with the natural torus technology thus being far from the reality. These are not considered by the author.

  The above, probably, explains why real methods of fighting tornadoes have never been developed and the latter "walk by themselves".

  Moreover, this may be the reason for the absence of man-made energy sources or transport vehicles developed on their basis.

  Though, on the other hand, a tornado is a natural phenomenon like, for instance, season changing

To sum it up, natural equivalents of torus technologies and elastic mechanics are *self-supported torus mechanisms* ***VTortex and Foam^{VTortex}, namely*** tornadoes, galaxies, ball lightnings, small comets, etc., with absolutly identical physical processes going on in them [3-6].

Man-made torus and elastic mechanisms are working models of these natural vortex technologies that help understand the following phenomena:

- peculiar movement of "heavy" (bugs) [16] and "light" (flies) insects in the air as well as of fish (trout, salmon) in mountain rivers, etc.;
- how the unexhaustible/eternal' energy which for a long time has sustained the existence of our Galaxy and tornadoes is produced;
- how to develop sources of this energy and transport vehicles on its basis to function under terrestial and non-terrestial conditions;
- what should be developed in the near future to replace the hydrocarbon and nuclear energies since the focus on these energy types is leading Mankind to a dead end [17];
- how to weaken or destroy a tornado or switch it to useful work;
- reasons for the global change (cooling) of the Earth climate and what should be done to get prepared for extreme survival conditions in the non-distant future [5, 17], etc.

The Dynamic Structure of the Earth's Atmosphere as Tornado Activator. The Ozone Depletion

The atmosphere of a star or a planet, including that of the Earth, is structured by the **Coutte-Shikhirin Flow** representing the 5-th typical form of a 3-phase fluid medium existence, see [18] for details. The **Coutte-Shikhirin Flow** is a tight pack of eversible/enveloping tori closed (at the poles) and open (between the poles) and filled with working fluid medium (gas or liquid) under overpressure.

For the Earth, these tori are Polar, Ferel and Hadley cells which (Fig.1):

- are "beaded" onto the Earth globe along its axis, with the globe being the central body of the tori (i.e. Polar, Ferel and Hadley cells).
  The Earth and other planets are hard and flexible spherical shells filled with matter structured in a pre-determined way; to be more precise, *it is a structured ball*, a dodecahedron or its combinations (stars and planets), formed by the helical rolling mill of any active galaxy [3];
- interact by eversion/envelopment and rotate relative to the Earth's axis;
- movement processes in the North hemisphere are reflection symmetric to those in the South hemisphere;
- drawn to the equator from the South and North poles since the Earth's gravitation center is super-high vacuum in its center, see [18] for details, so that the strongest attraction falls on the equator;
- channel processes in the Earth's atmosphere caused by interaction of Polar, Ferel and Hadley cells give rise to cyclones and anti-cyclones with tornadoes being their root cause.

Technically, Coutte flows are developed, for instance, inside **hollow** cylindrical surfaces (near the walls) rotating around their longitudinal axes (Fig.1, top left), and these flows will move in one and the same direction relative to the longitudinal cylinder axis, etc.

Another example: if we take two coaxially connected hollow balls of different diameters, fill the cavity between them with fluid and begin to rotate this system around the longitudinal axis, then, the author believes, the Coutte flows will develop and move similar to Coutte-Shikhirin Flows in the Earth's atmosphere, i.e:

- between the poles and the equator the torus flows will move in the opposite directions;
- the flow system of the upper hemisphere is reflection symmetric to that of the lower hemisphere; and
- Equatorial flows of the upper and the lower hemispheres will move in the same direction (Fig. 1).

The atmosphere of the Earth or any other planet of the Universe is adequate and hence suitable for life when the Polar cells are closed.

The destruction or deteriotation of any planet's atmosphere is always a result of Man's activities.

The atmosphere destruction process always follows the following sequence:

a) **the Polar cells for each hemisphere are converted from closed to open ones in winter, and again to closed ones in summer. This process is now observed on the Earth;**
b) **in winter the open Polar cells for each hemisphere disappear to be restored in summer;**
c) then the Polar cells disappear for ever irrespective of the season;
d) always open pre-equatorial Ferel cells disappear irrespective of the season;
e) always open pre-equatorial Ferel cells disappear for ever both in winter and in summer;
f) always open equatorial Hadley cells are converted into one cell in winter and restored into two cells again in summer, **as it happened on Mars**.

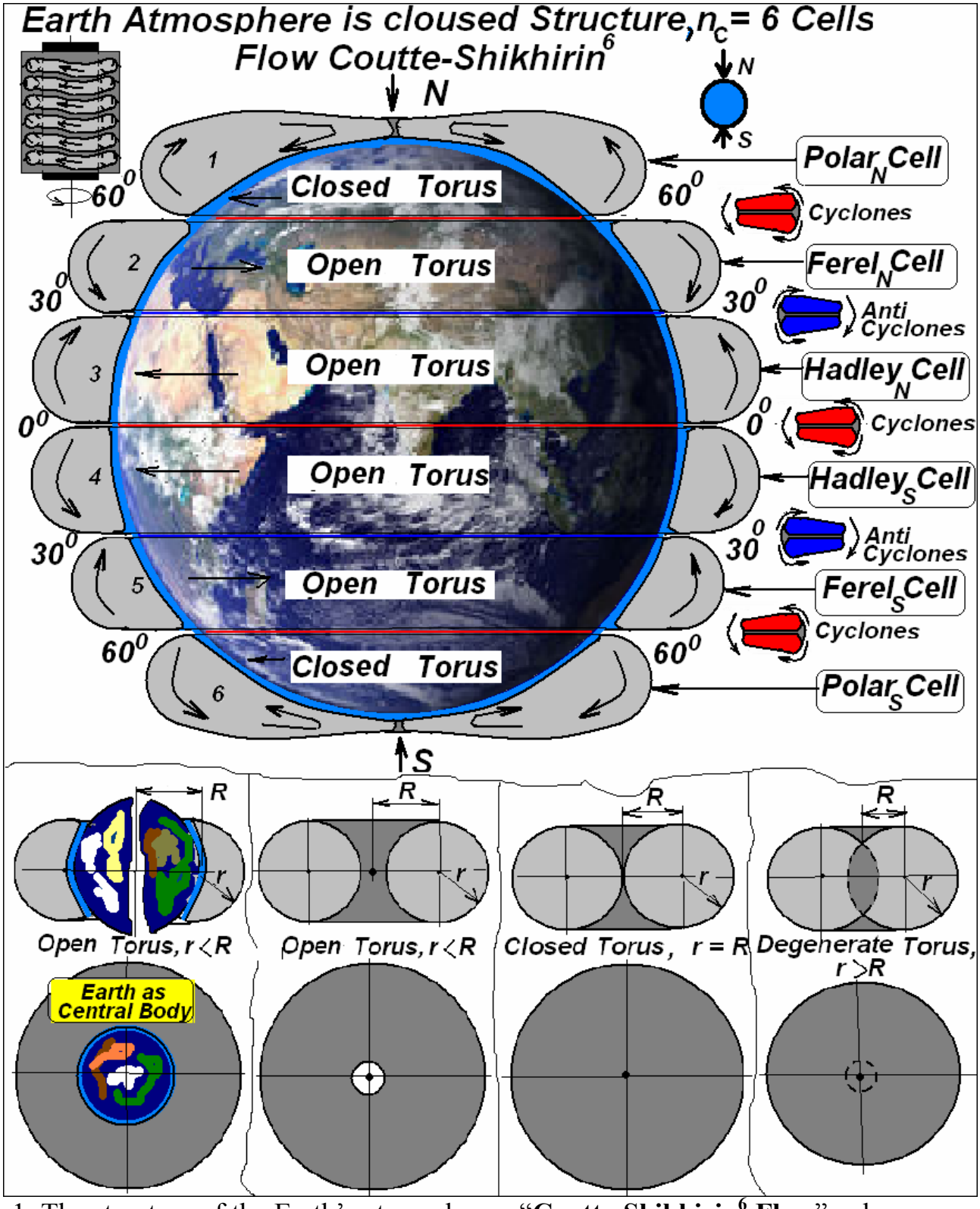


Fig.1. The structure of the Earth's atmosphere - "**Coutte-Shikhirin^6 Flow**", where n_c = ***6*** is a number of Polar, Ferel and Hadley cells.

The distribution of temperatures and pressures in Polar, Ferel and Hadley cells, as in open and closed tori (a special case of a toroid), is similar to the temperature and pressure distribution in VTortexes and AntiVTortexes (Fig. 3).

The Ozone Depletion opened in 1958 is just a direct evidence of deterioration or destruction of the Earth's atmosphere, manifested by:

- **partial disappearance of Polar cells, when a closed polar torus is converted to an open torus, i.e. bold patches appear at the Earth's poles, and**
- **complete disappearance of Polar cells**

In other words, what we see now is step "a" that will change to step "b" with a quick jump in a few coming years (Fig. 2).

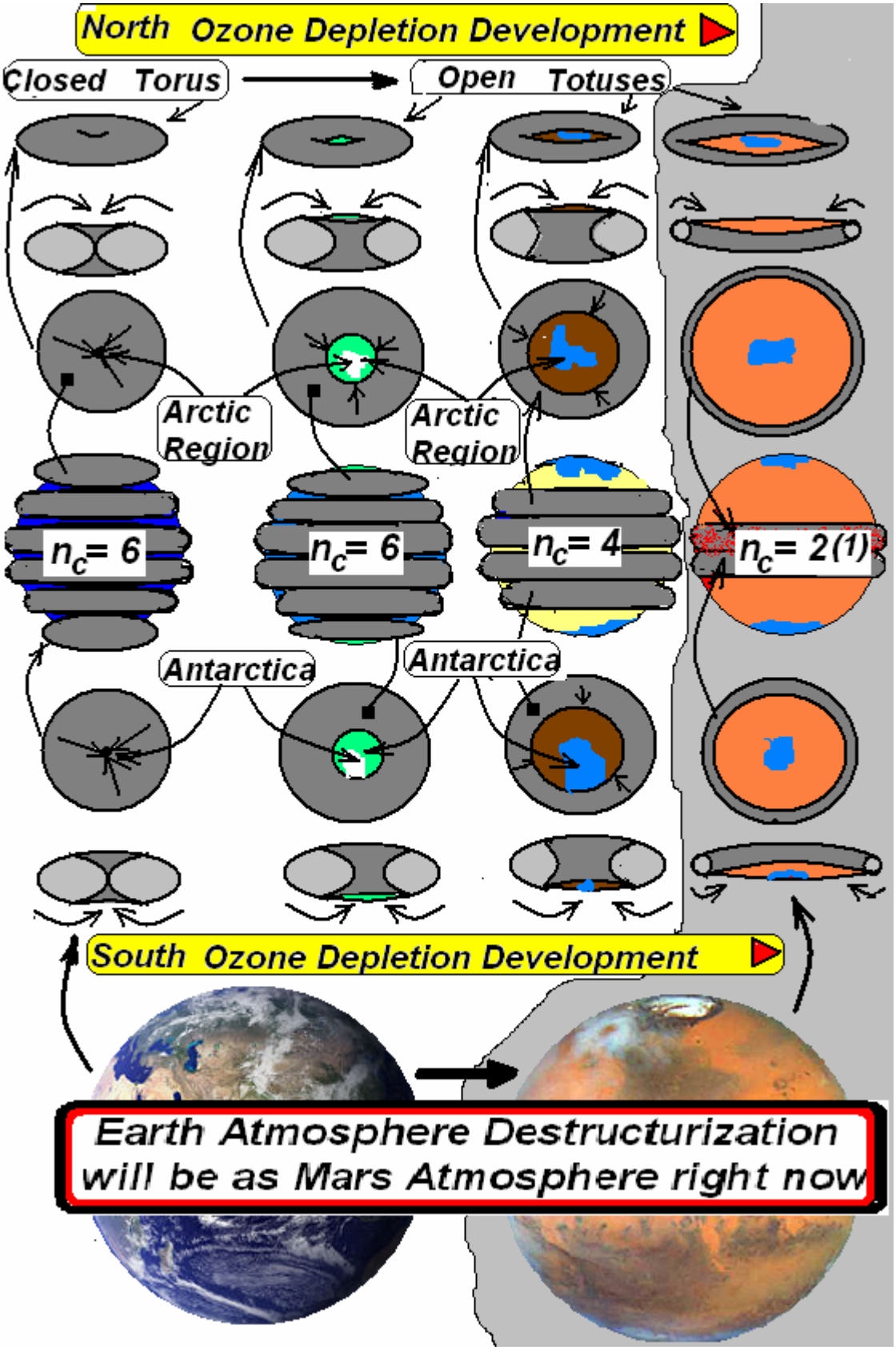


Fig. 2. A quickly developing process of the Earth's atmosphere destructurization will lead to a condition we are now observing in the atmosphere of Mars.

Functional Features of a Tornado

A clever guy (a tornado) will never climb a mounting but rather bypass it.
A folk wisdom

Tornadoes are split into two types (Figs. 1, 3):

- **Type 1**: **VTortex**, which means a tornado in a cyclone that has **the enveloping implosive end or a centripetal radial sink (the tornado's head)** directed towards the Earth's surface whereas **the eversible explosive end or the centrifugal radial source (the tornado's tail)** is directed away from the Earth's surface (Figs. 4, 5).
  This is a result of mutual interaction of Hadley cells above the equator of the Earth (0^o) and the result of interaction of Polar and Ferel cells in latitude 60^o both North and South.
  The most favorable conditions for tornado activation and development are in the atmosphere over the Bermuda triangle area and South Chinese Sea located strictly opposite each other.
  After-effects: mist, thunderstorm clouds (between the Earth and the **Coutte-Shikhirin[6] Flow),** low atmospheric pressure, lightnings, rain, hail, rainbow, smell of ozone. The rain may be a continuous drizzle formed by a multiplicity of tiny tornadoes or a short-time shower produced by a smaller number of larger tornadoes, or a downpour resulting from activities of several tornadoes or one big tornado.
- **Type 2: AntiVTortex that means a tornado in an anticyclone that has the enveloping implosive end or the centripetal radial sink (the anti-tornado's head) directed away from the Earth's surface, and the eversible explosive end or the centrifugal radial sink (the anti-tornado's tail) directed towards the Earth's surface.**
  After-effects: fair weather, high atmospheric pressure, white clouds (between the **Coutte-Shikhirin[6] Flow** and Space), formation of mizzle and mist
  The consequences of the 2-nd type tornado activities do not seem catastrophic for the Earth or at least are not well-known so far, therefore in this research an attempt is made to implement an automatic control mechanism of the Type 1 tornado (further called "the tornado").

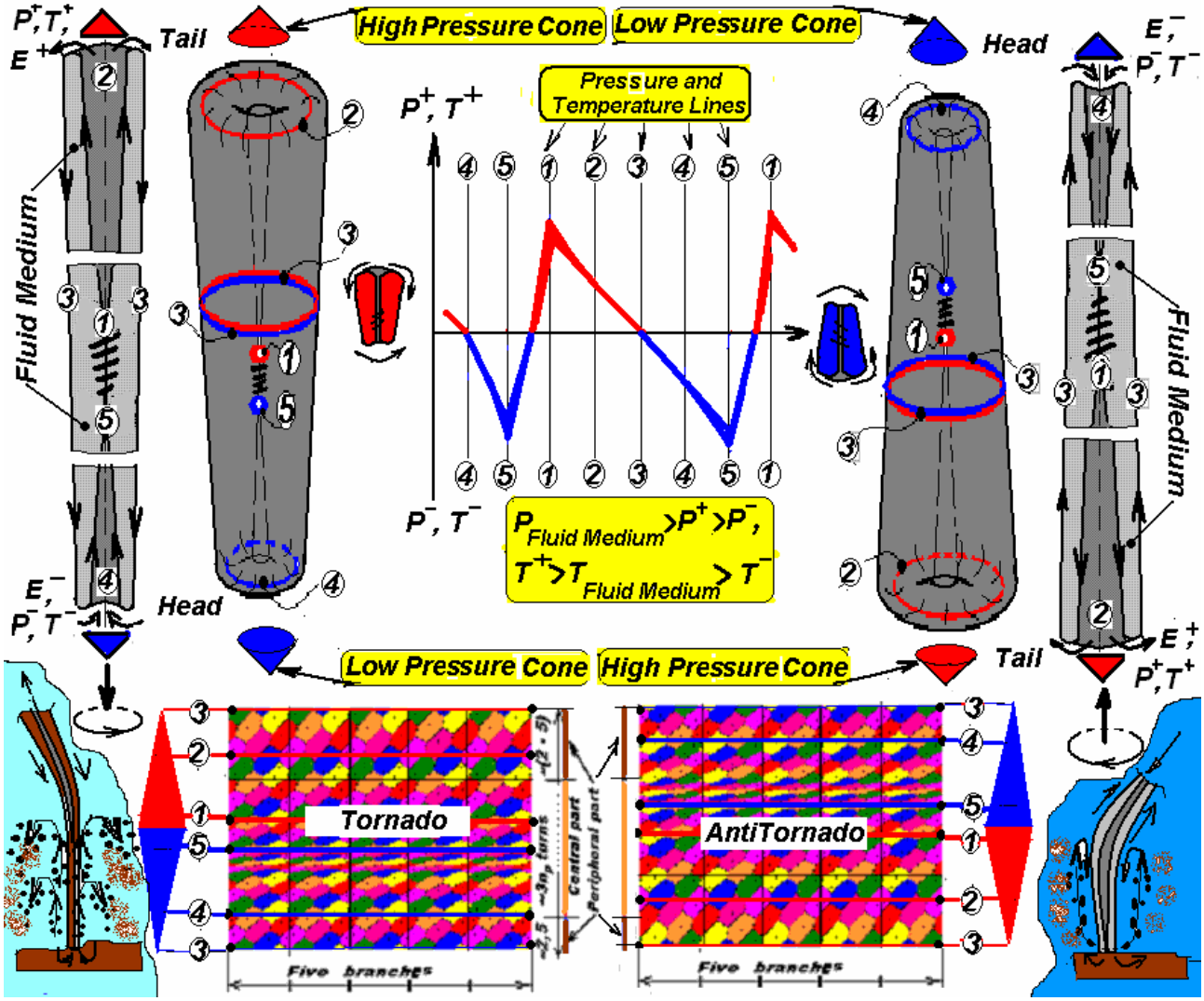


Fig. 3 Tornado (VTortex) and Anti-Tornado (AntiVTortex)

Fig.3 shows an arbitrary distribution of pressures ($P^+ \rightarrow P^-$, $P_{Fluid\ Medium}$) and temperatures ($T^+ \rightarrow T^-$, $T_{Fluid\ Medium}$) at the periphery of any VTortex and any fluid medium under overpressure. The same distribution is shown below on a colored scanned image of any tornado.

To the left is a view of a cyclone VTortex and to the right is an anticyclone AntiVTortex

The bottom left corner of the Picture shows something like a "cascade", I would call it an "explosive dirty fountain", e.g. of earth scattered about radially (explosion) as a result of the tornado "head's" activity.

The bottom right corner is a picture of an "implosive clean fountain" dragged radially (implosion) to the anti-tornado center as a result of the anti-tornado "tail's" activity

All the above can bee seen in Internet by typing key words "Tornado", "Vortex", "Hurricane", etc. in www.Google.com or www.YouTube.com.

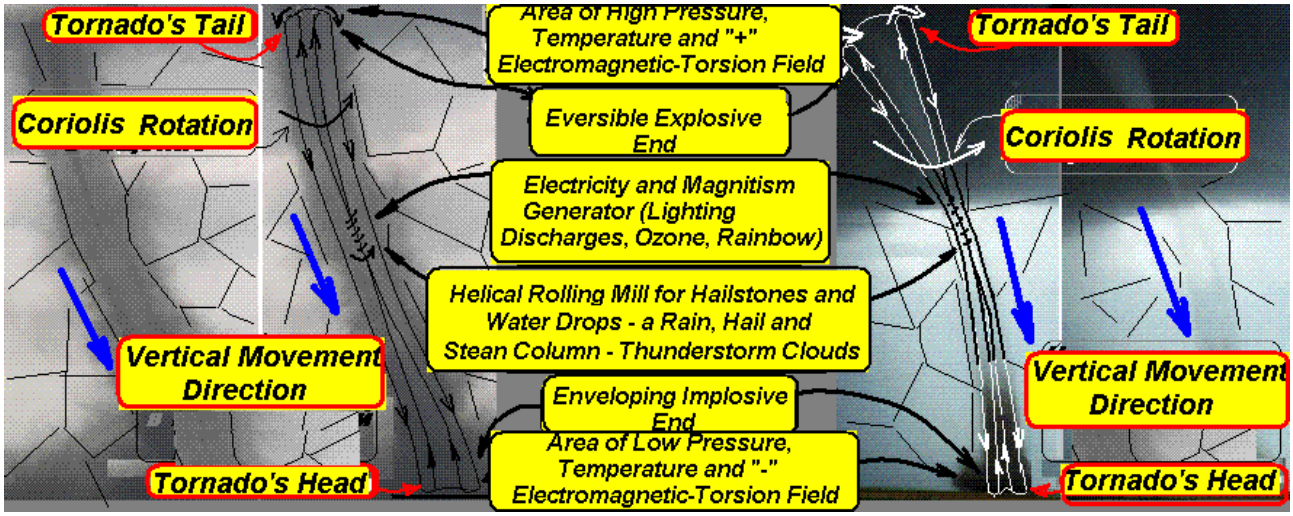


Fig.4 The structure of a tornado as a cone-shaped toroid and its functional specifics

The principles of the ***AntiVTortex*** movement are identical to those of the ***VTortex***, namely:

- the tornado's body moves along channels, over surfaces and Plato's tetrahedrons (Plato-Shikhirin system) in a system of a tight pack of dodecahedrons. The Plato-Shikhirin system (further ***(Plato-Shikhirin Skeleton)*** **is thus nothing but the Ether** [18];
- **this process is similar to the way run by a lightning** (see below);
- the "tail" (the explosive end) of a snake-like tornado is dragging itself after its "head" (the implosive end) which is "looking for" a low-pressure slit (a Plato[4] channel) to drop into it, etc. (Fig.5);
- in so doing the tornado always seeks a "vertical" position (with "the tail" above and the "head" below) and moves like a spinning top over the horizontal plane. In parallel with this, the implosive "head" automatically swallows everything located on the surface.

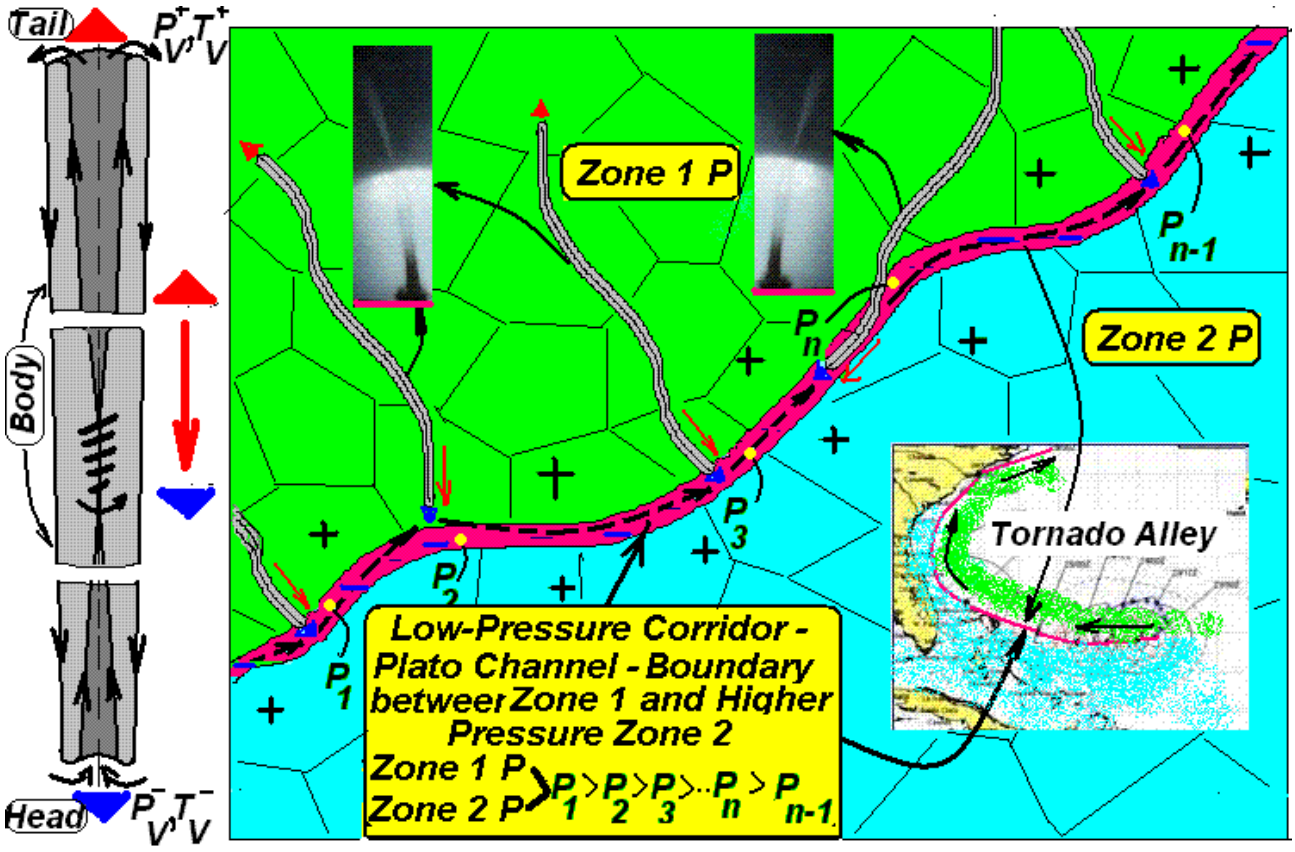


Fig. 5 Principles of movement (seeking a lower pressure area, snaking, falling in) of any tornado in horizontal and vertical planes by the example of the Tornado Alley

Zone 1 - a zone (cluster) of the Foam[4] air space with functional characteristics (the dodecahedron pack density, etc) different from those of the gas (air) space of Zone 2. For instance, this may be the boundary between the air space and a river, an ocean, a sea, a pool, between the coast and water, etc.
Incidentally, Nikola Tesla (1856-1943) transmitted electrical power along the coast-water boundary benign for the existence of the Plato-Shikhirin channel system which repeats the boundary outline.

The effect of the structurization energy and information of the VTortex as one of the five regular forms of the working/fluid medium existence in Nature [18] is proved directly and indirectly by:

- Torus technologies (TORTECH®) and elastic mechanics (ELASTONEERING®) [3-9];
- Topology [24-28];
- Geometry [29];
- Arithmetics;
- The "Bloating Law" [4],

- Practice [30-36], etc.

Shortly speaking, a tornado is a truncated cone-shaped toroid with length H, big D (the tail) and small d (the head) diameters, respectively, and conicity angle $\alpha = \sim 6^{o}$ (Fig.6).

Then,

$$Tg\alpha/2 = 2H/(D-d),\ Tg3^{0} = \sim 0.05.$$

i.e.

$$D = H/10 + d,\ a\ H = 10(D - d) -$$

experimental (empirical) Shikhirin dependence

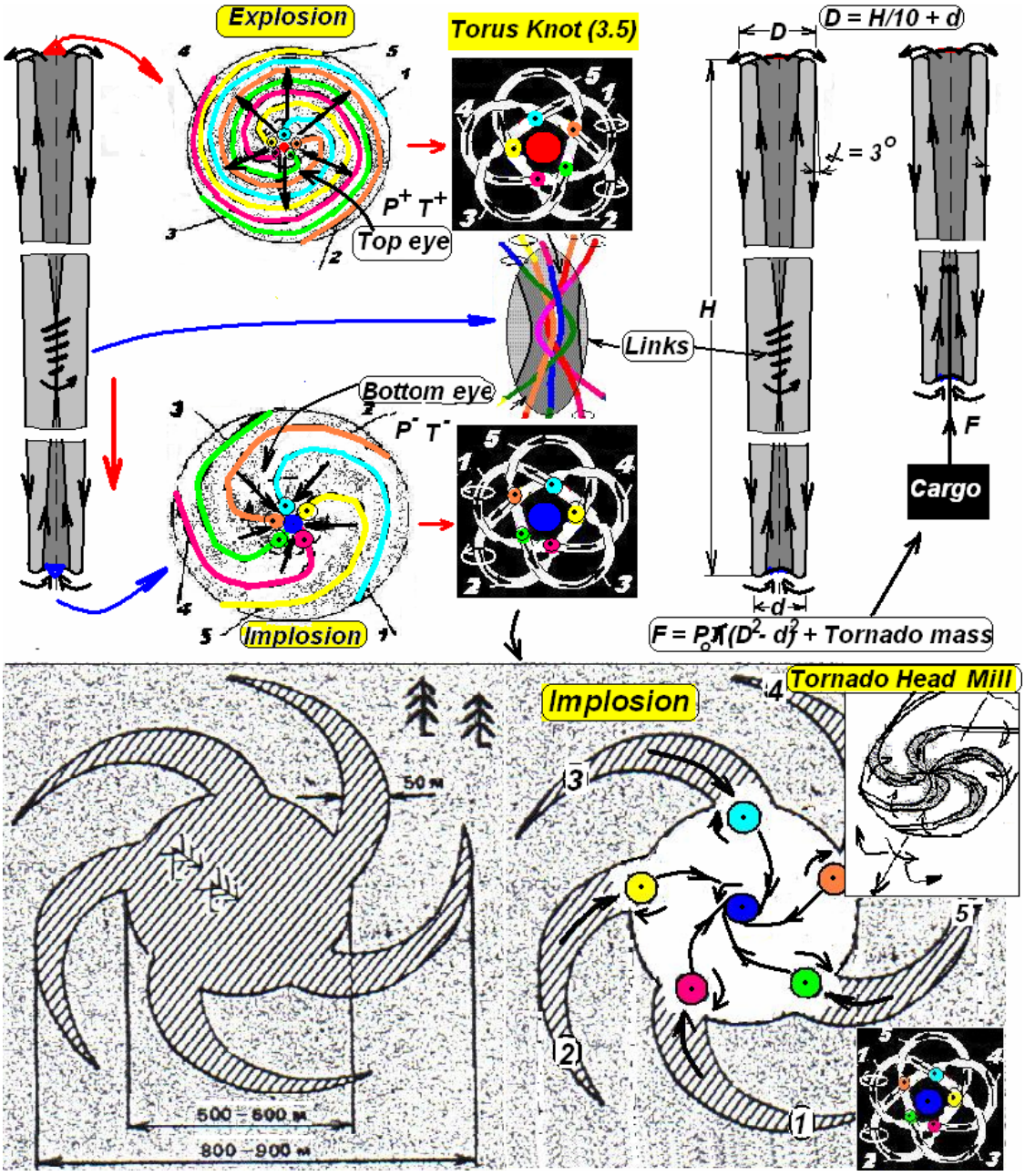


Fig. 6 The structure and the tractive force of a tornado as an elevator. The fallen pines have a radial pattern with their tops towards the center of a "round" spot.

Fig.6 shows:
Top left is topological design of a tornado, side views: above is the tornado's tail or the "top" of a torus knot (3.5) and below is the tornado head or the "bottom" of the torus knot (3.5); in the middle is a helical rolling mill producing hailstones, water drops, snow flakes
Working knot (3.1) look at http://haha.nu/beautiful/spiral-torus-knot.
2. Top right: a cargo transferred by a cone-shaped torus (tornado) when the latter's shell is filled with working fluid medium under overpressure, also shown is a formula for tractive force calculation, where ***(P_0)*** **–** is unit pressure in the toroidal shell.
3. Shown below are:

- Left: *"the sketch and the text taken from [8], "a picture of destructions left by a catastrophic Ivanovsky tornado in a pine forest near the city of Kostroma: a round spot and* **(attention!)** ***Five glades****…"*
- The fallen pines have a radial pattern with their tops towards the center of the spot. This shows and proves that the head of the tornado is its enveloping end in whose area there is high vacuum and low temperature.
- Right: the same sketch supplemented by the author that shows the process of drilling-milling of the earth surface by the tornado head (the so-called Tornado Head Mill).

It should be noted that external fluid medium (air and water) together with "debris" is sucked into the tornado via "slits"/threads of a torus knot ($3n_p$, 5) that are actually Plato-Shikhirin[7] channels combined into a single Plato-Shikhirin[7] channel system (*Plato-Shikhirin Skeleton), or Ether,* that represents the **1-st phase of regular fluid medium forms in Nature** [18].

A small excursion:
I cooperated with the author of [8, "The Tornado"] Vladimir Kushin (1931-2004) since 1995.
In 1996 we published our projects:

- "Artifical-Wind-Operated Power Installation", p. 17 (Dr. Vladimir Kushin),
- "Tore Technologies", p. 36 (Dr. Valeriy Shikhirin)

in the *"Russian Sci-tech", Science & Technologies News from Russia, A Quarterly MAGAZINE", Science & Technologies & Investment For Conversion, Science & Technologies Inc. (President Dr. Vladimir Ivashkov), 1996, New-York – Moscow."*
In the following years until the end of his life we had mutual consultations related to development of engineering versions of artificial controllable tornadoes in closed and open space without destruction of natural processes in the Earth's atmosphere during the tornado's activity.

In the author's opinion, the work [8, "The Tornado"] by V. Kushin is the best among works dedicated to tornadoes in terms of the truthful description of activities of a natural tornado ("the natural truth").
The end of the excursion.

So, the "…five glades…" is a direct proof of the tornado effect, namely "drilling-milling" of the earth surface by the tornado "head" as a torus knot ($3n_p$, 5) [3], where:

- $\boldsymbol{p = 3_p n_p}$ is a number of turns around the VTortex meridian (polar/longitudinal axis);
- $\boldsymbol{3_p}$ is a number sequence ***3, 6, 9, 12 ...*** (consisting of 3 and multiples of 3);
- ***- 5*** is the number of turns around the longitude.

The round spot and five glades are just the result of drilling-milling of the ground (destruction of a pine forest in a helical star form) by the five-spiral head of the tornado, or, in other words, "the tornado footprint".

A picture of the "tail", or the upper "eye", of a tornado in a cyclone taken from Space may be seen at http://www.enterprisemission.com/hurricane3.htm.

The author has suggested a parameter estimation system for any tornado (a typical tornado group) taking into account specifics of torus (tore) technologies, elastic mechanics and the Shikhirin dipole (VTortex) [4].
Table 1 shows an example of estimation of "typical" tornado parameters at a definite time moment. See [8] for more details.

Table 1

Parameters of a "typical earth tornado" at a definite time moment
(first approximation, empty cells "are still being filled in")

Parameters of a standard ("typical") tornado	**Quantitative estimation**	**Qualitative estimation, comments**
Physical characteristics: - Bottom diameter (near ground) – the tornado's head (d), m - Top diameter – the tornado's tail (D), m - The tornado's length (height) *(H)*, m - Volume, m^3 - Average density, kg/m^3 - Mass, kg	 50 300 2,500 $\sim 1.5\ \boldsymbol{\pi}\ 10^7$ 2.5	A soft/elastic cone-shaped shell filled (by effect of structurization energy and information) with working fluid medium (air and water) under overpressure, and increasing, due to the "Bloating Law", its - weight and volume; - electromagnetic charge; - vortex (torsion) charge, etc. The pressure charge is a constant value – Shikhirin constant [3] - due to

	3.75 π 10^7 or over 100,000 tons	the law of eversibility/envelopment
Topological characteristics [16]: - **Torus knot that causes tornado structuring is a closed thread (a string)** - **Total number of turns** - **Number of turns at the periphery** - **Number of turns/rolls in the center** - **Number of links in the center** - **Number of "colors"** - **Number of Shikhirin[7] cells (heptahedrons) – their tight pack**	($3n_p$, 5) (3_pn_p+ 5) ~ 7,5 ~$3n_p$- 2,5 (3np-1) $7n_pX5 = 35n_p$ $7n_pX5 = 35n_p$	A tornado has totally ***(3_pn_p+ 5)*** turns of which ~ ***7.5 (2.5 +5)*** turns are distributed over the periphery at the eversible (explosive) ***(~ 2.5*** turns) and the enveloping (implosive) ***(~ 5)*** ends, while (***$3n_p$- 2,5)*** turns being hundreds, thousands in number are concentrated at/dragged to its central part to the mouth of the centripetal radial sink, the implosive enveloping end of the tornado. ***$P = 3_pn_p$*** is a number of turns around the VTortex meridian (polar/longitudinal axis) [3], ***3_p*** is a sequence of 3, 6, 9, 12 ... numbers (including 3 and multiples of 3). **5** is a number of turns around the longitude The heptahedron, or the Shikhirin cell[7], is a polyhedron having 7 facets/colors (the hexahedron base, four tetrahedrons and two triangles), 13 edges and 8 vertexes
The tornado's "head" is the implosive enveloping end, the predictor funnel, the centripetal radial sink (d) 1. The temperature in the predictor funnel mouth (in front of the tornado's "head") *(T^+), ^oC*: - Min - Max **2.** The pressure in the predictor funnel mouth (in front of the tornado's "head") *(P^-), atm.:*	d = D - H/10 $\lvert$ - 30^0C $\rvert$ $\lvert$ - 150^0C $\rvert$	This is the "lower eye" of the tornado – "the black hole", "negative energy".

- Min - Max	 -10 -100	

The tornnado's tail is the explosive eversible end, the corrector funnel, centrifugal radial source *(D)*. 1. The temperature in the corrector funnel mouth, in front of the tornado's "tail"*(T^+), ^0C* - *Min* - *Max* 2. The pressure in the corrector funnel mouth, in front of the tornado's "tail" *(P^+), atm.* - *Min* - *Max*	***D = H/10 + d*** $+200^0$C $+500^0$C + 2 + 5	**This is the tornado's "upper eye", "positive energy".** Formation of thunder clouds, electrostatic and magnetic charges and their discharging manifested by lightnings, ozone, rainbow, water drops, snowflakes and hailstones.
Fluid working medium (3-rd phase) **Unit pressure in the toroidal shell *(P_0)*, *kg/sm^2*** - *Min* - *Max* -	 0,05 0,5	Unit overpressure values of working/fluid medium in the toroidal shell ensuring its optimal "eversibility" – the "eversibility/envelopment law" - the Shikhirin constant [3]
Tornado "wall" material - Mass, kg - Volume, m^3 - Density, kg/m^3 - Temperature - Consumtion	 $\sim 10^7\pi$ $\sim 8X10^6\pi$ ~1.4 – 2.0 ~ (- 70) – (+250)	The working fluid medium in the toroidal shell is under overpressure and has a large density.
Tractive force *(F), kg* *Geometrical parameters of*		*1.* ***$F = [P_o\pi(D^2 - d^2) + tornado's\ mass]$***

the tornado: ***«H»*** ***«D»*** ***«d»*** 10 2 1 100 20 10 1500 250 100 2000 400 200	~ 0,5 ~ 50 ~ 1800 ~ 19000	– experimental Shikhirin dependence *2.* Load + tornado's mass are distributed evenly over the entire length (height) ***H*** of the tornado *3.* The tractive force does not depend on the toroid's length (if the tornado's mass is neglected) *4.* Max (peak) power per 100 seconds – 30 GW
Central part		Formation of cold water drops, snowflakes and hailstones
Thin soft toroidal shell "material" (2-nd phase): **1. General characteristics** - Thickness, m - Volume, m^3 - Mass - Density, $10^3 kg/m^3$ **2. Material tension values:** - periphery - ends - central part	~ 0.02 – 0.1 ~ $0{,}1\boldsymbol{\pi}$ –$8X10^3\boldsymbol{\pi}$ ~ $9\boldsymbol{\pi}$ –$1.2X10^4\boldsymbol{\pi}$ 90 - 150	
Branches/rolls (1-st phase) **1. Quantity** - diameter - volume - mass **2. Branches/rolls as a reinforcing layer:** - Min diameter, m - Max diameter, m - Density, kg/m^3	1, 2, 4 & 5 ***d/5*** ***D/5*** 0.2 – 2 20 - 40 0.4 – 5 50 – 80 90 - 150	1 – beginning of formation, i.e. structurization of the tornado, 2, 4, 5 – the tornado development: power ramp-up, increase in size according to the "Bloating Law", 5 – Maximum sizes and dimensions before disintegration → depression and destructurization of the tornado. Flexible cone-shaped rods rotating round their longitudinal axes, $\alpha = \sim 3^0$ Min ~ d/5, Max~ D/5

3. Branches/rolls as rolls of a helical rolling mill: - Number of rolls in the helical rolling mill for hailstones, water drops, snowflakes roliing - pressure force between linked rolls in the central part	~(2–5)X(0,1- 0,5) 150 - 250	Flattened flexible cone-shaped rods rotating around their longitudinal axes, $\alpha = \sim 3^0$. 1. Hailstone, water drop and snowflake sizes are in direct proportion to the tornado's dimensions. 2. The number of rolls (the more rolls the stronger the tornado) determine the shape of hailstones: from faceted ovaloids to giant massive ice "snowflakes" 3. Giant drops "shot out" of the helical rolling mill splinter according to a definite sequence, shapes and sizes.
Linear (vertical) movement velocity (of walls), m/s: - periphery - central part	~ (+30) – (+300) ~ (- 30) – (-300)	According to functional specifics of torus technologies, the movement velocities of the periphery (upwards) and the central part (downwards) are numerically equivalent but have different signs.
Radial velocity, m/s: - centrifugal (in the predictor funnel) - centripetal in the corrector funnel)	~ 10 – 100 ~ 10 – 100	According to functional specifics of torus technologies, angular movement velocities during eversion (centripetal) and envelopment (centrifugal) of the shell material are numerically equivalent but have different signs
Linear and angular roll movement velocities		
Starting linear and angular velocities of shooting hailstones, water drops, snowflakes		
The tornado's driving		Self-supported (unsupported)

force provided by P^- и P^+ pressure difference, atmospheres - min - max	 (-10)+(+2)= (-8) (-100)+(+5)=(-95)	movement – the tornado is sucked into a low-pressure zone P^- in front of the predictor funnel and simultaneously ejects itself (squeezes out) from the high-pressure zone P^+ [2,4].

Structurization, Destructurization and Interaction of Tornadoes

The interaction of vortex rings, artificially created closed and open tori, is well described in [19-22].

The investigations described there were conducted theoretically and/or "on the desk" and did not take into account the most important functional specifics of these structurization (structurization energy and information) processes in Nature.

The research work carried out in [19,20] reveals VTortex interaction in water as the interaction of positive and negative (see the author's comment) dipoles (Shikhirin dipoles) [3] that destroy themselves when they have exceeded standard dimensions according to the "law of bloating".

Moreover, in [17] the author suggested his own classification of vortices that can be further developed and clarified. Only closed vortices – vortex dipoles or VTortexes – are considered, i.e. those that have the shape of a torus or a toroid (Table 2).

In this paper the author has classified almost all known types of interaction of water VTortexes that generate the 3-rd (VTortex) and the 4-th ($Foam^{VTortex}$) regular forms of fluid medium existence [18] in Nature, including some functional features that were not considered earlier (Fig. 7).

Observations were carried out in an open swimming pool as a natural water laboratory, where the walls and the bottom were made of blue ceramics and acted as a natural screen that in the bright sunlight displayed processes of structurization, destructurization and interaction of vortices viewed as distinct dark-gray dynamic shadow projections.

The three-dimensional concept of a vortex is based on functional specifics of torus technologies, besides it should be also taken into account that the mechanics of water vortices in liquid medium and gas vortices in gas or liquid medium is identical.

Vortex Classification

Table 2

Vortex Dipole Type	Активатор вихря	Conditions of exixtence			Toroid (Torus) Type					Toroid	Energy Produced	
		Self-Support	Activator Support	Not Supported	Cylinder	Cone	Bloated Cone	Closed	Open		Electro - Magnetic	Torsion (Vortex)
Ring (Fading)	■			■	■				■			
Newton's Basket	■		■			■		■			■	■
Milovich Dipole	■		■		■	■		■			■	■
Shikhirin Dipole	■	■					■	■		■	■	■

Examples in Nature	Dipole	
	Milovich	Shikhirin
Galaxy		■
Tornado		■
Ball Lighting		■
Small Comet		■
Hadley Cells	■	
Benard Cells	■	
Vortices in Liquid or Gas Flow Meanders		■
Coutte Flow	■	

The Milovich dipole is a man-made VTortex tornado with constant physical parameters, e.g. the one generated in curvilinear segments of a pipe.
The Shikhirin dipole is a natural VTortex tornado with physical parameters increasing in a non-linear manner according to the "bloating law" [4]. On reaching the maximum (standard) values of the parameters the tornado is split into three VTortex tornadoes (Fig. 7_4), etc.

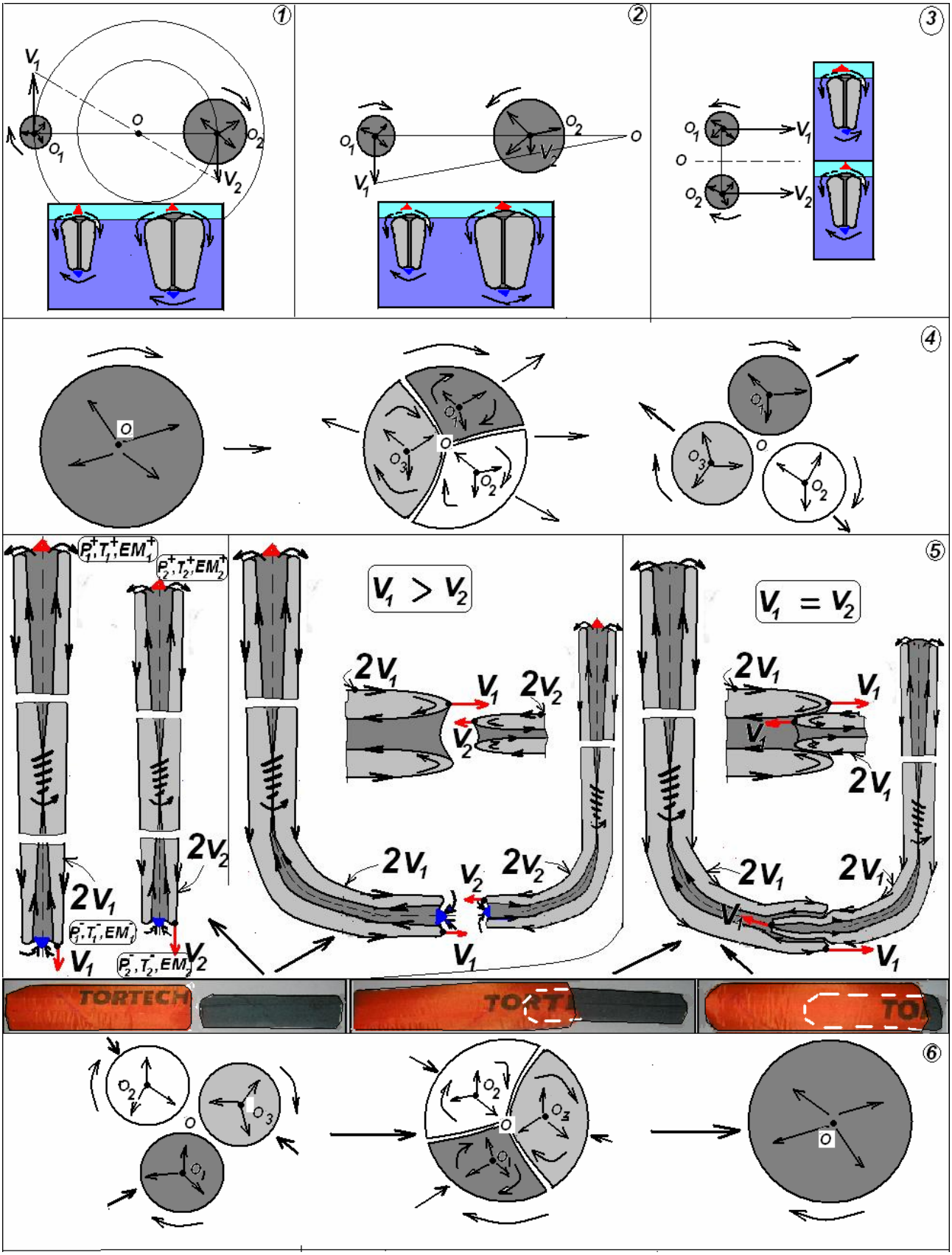

1
2
3
4
5
6
V1
V2
O
O1
O2
O3
V1 > V2
V1 = V2
2V1
2V2
P1+,T1+,EM1+
P2+,T2+,EM2+
P1-,T1-,EM1-
P2-,T2-,EM2-
TORTECH

Fig. 7 Examples of multi-VTortex interaction. Plato-Shikhirin channels are not shown.

Fig.7 shows examples of interaction of VTortexes (vortices), namely:

1) vortices are rotating in the same direction;
2) vortices are rotating in the opposite directions;
3) equally sized vortices are rotating in the opposite directions;
4) vortex destructurization, the vortex is split into **three** vortices according to the number of branches in the torus knot ($3n_p$, 5);
5) capturing a weaker vortex by a more powerful vortex.
   The low-pressure zone (P^-_1) generated by the bigger vortex before its head pulls in (sucks in) the head of the smaller vortex P^-_2); (P^-_1) > > (P^-_2);
6) the process of integration or structurization of vortices is like the process of their destructurization but going in the reverse order.

A small excursion:

From my early childhood I remember a small valley with the river Beryozovka running through to the river July on both banks of which lies village Iyulskoye of former Vyatka Province which is now part of the Udmurt Republic, Russia.

This is my mother's birthplace and 10 years of strict mentorship of my grandmother Anna Fedotovna Bochkareva (nee Varlamova) who taught me the first labor lessons that were far from being tender.

Instantly, just in that place bones of a mammoth were found when I was a child (late fifties – early sixties last century); the bones are now at the municipal museum of Izhevsk city.

Besides the river Beryozovka, the valley had lots of springs. Then a dam was built in the valley to supply water to cattle farms but the springs remained and bubbled upwards so that we used to feel their ferocious cold as we swam, sometimes cramped. The springs (recessed, suppressed currents) looked like water spouts formed in river meanders.

Photographs of water spouts [39] are a courtesy of Pavel Poluyan who gave his permission to include them into this paper with my comments (Fig. 8).

Similar pictures (multiple vortices, or $Foam^{VTortex}$) may take place in meanders of any size rivers.

I used to watch them, i.e. **vortices formed in river meanders "according to Schauberger"**, in such rivers as the Kama, the Pozim, the July, etc., and single recessed currents arising during replenishment of a basin were investigated by me in one of Chicago swimming pools, USA.

Moreover, these processes are independent of sizes of liquid or gas flows of mega-, macro-, micro- and nano-worlds.

So, there are two sources of liquid tornado generation (Fig. 8):

- **Single recessed (suppressed, sunk) currents** (springlets, springs, etc.) coming out "by a cap" to the surface of a fluid medium.
  This is an open tornado in which only the tail "works" (explosive radial source); its outer appearance, in the author's opinion, is structured by hexahedrons enveloping each other and it looks like the North Pole of Saturn. http://en.wikipedia.org/wiki/File:Saturn_hexagonal_north_pole_feature.jpg;
- **vortices formed in river meanders "according to Schauberger"** (any currents in the atmosphere, seas, oceans, Space, etc,).
  These are closed VTortex tornadoes, with their heads (implosive radial sinks) under water and their tails (explosive radial sources) coming out by "caps" to the water surface.
  Constantly interacting with one another VTortex tornadoes confined to a tight pack acquire a shape of conical six-facet pyramids the bases of which are formed by hexagon "caps" looking like Benard Cells.
  http://www.etl.noaa.gov/about/eo/science/convection/RBCells.html.

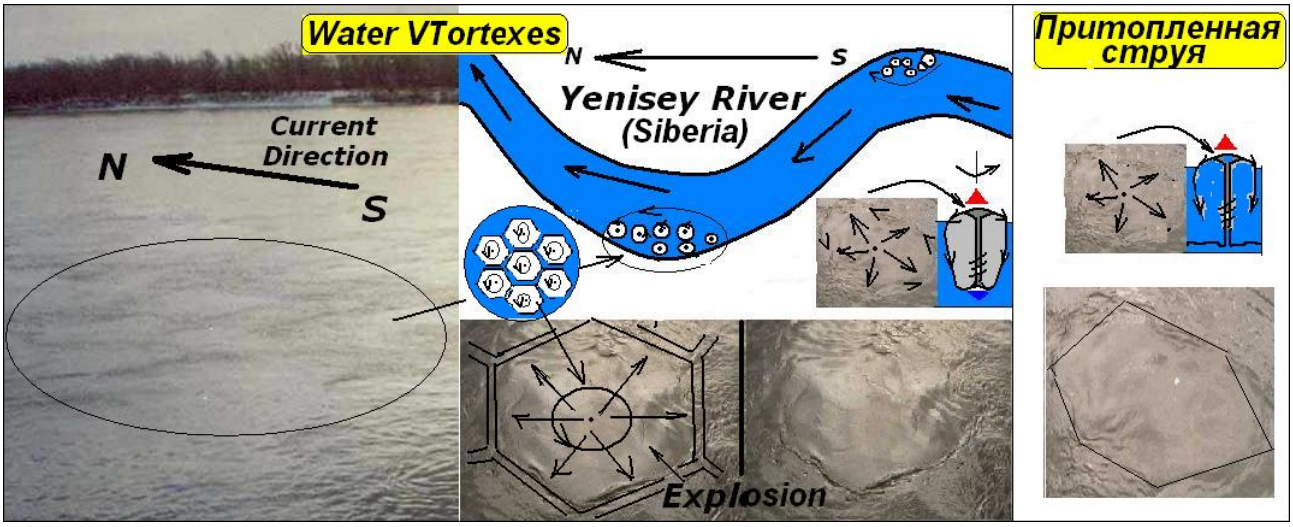


Fig. 8. To the left is a meander of the river Yenissey (Krasnoyarsk Area, Siberia) in which liquid water spouts confined to a tight pack originate and interact; to the right is a subwater spring bubbling upwards (recessed (suppressed) current).
The end of the excursion.

The processes of tornado structurization and destructurization are shown in Fig.9.

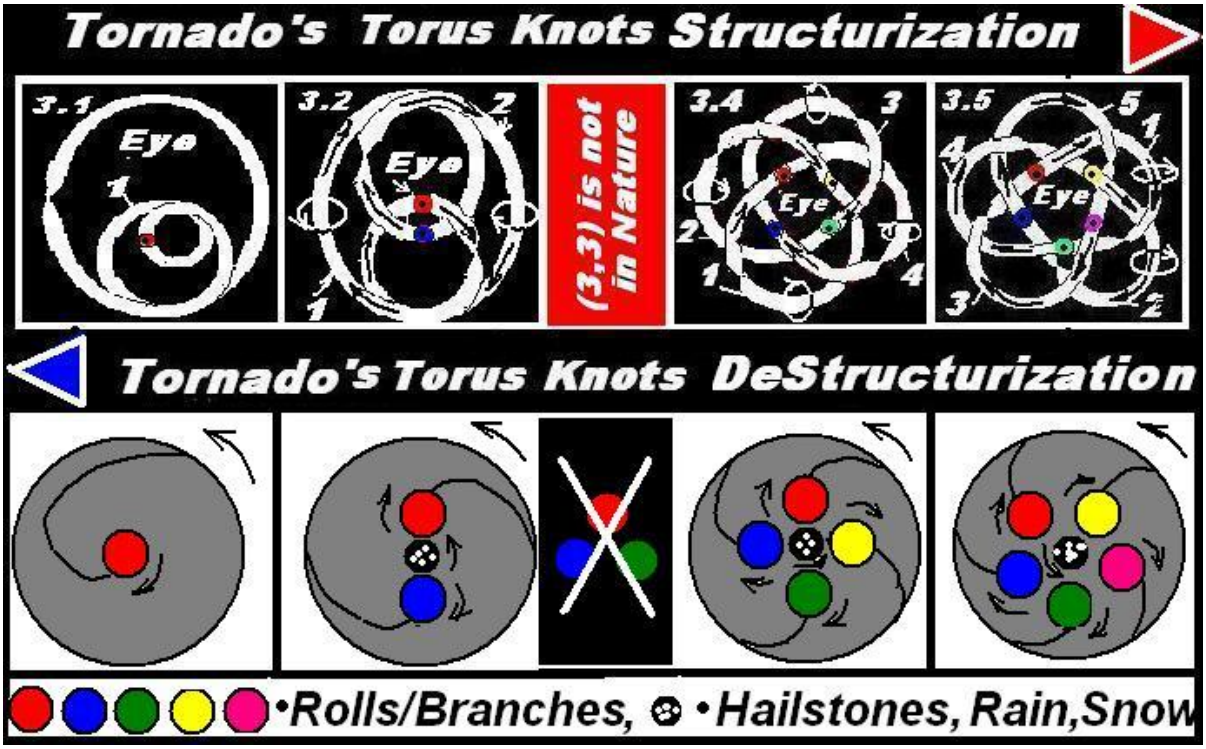


Рис. 9 The process of natural destructurization (depression) of a torus knot (3.5) → (3.4) → (3.2), as a topological basis of any tornado such as Isabel.

A tornado knotted by a ($3n_p$, 5) torus knot, i.e. the one having five branches (rolls, strings, etc.) is a top category tornado.
Similar processes occur **during interaction of galaxy vortices** in Plato-Shikhirin channels, namely in joints of four Foam[4] dodecahedrons, i.e. centers of the natural 4-dimensional Fuller's space.

Such numerous interactions (power, electromagnetic, torsion interactions, etc.) result in "unidentified" phenomena with exotic and mostly senseless names like *radiogalaxies, pulsars, quasars, dark matter, black holes, multiple stellar systems, star-type pairs, variable stars, exploding stars, neutron stars, white dwarf, etc.*

Methods of Tornado Destructurization

Nature never asks Man about a place best fit for generation of cyclones and anticyclones of which the tornado is the heart. Never get settled in such places!
Unfortunately, Man has a short memory and he settles in a dangerous spot, cultivates it and finally his offsprings perish in the tornado or the flood mincing machine, after which the process starts anew.

One the one hand, artificial violation of these natural processes in the Earth's atmosphere such as careless use of various tornado destruction technologies at

different phases of its existence may lead to still worse catastrophic consequences because Man (a Fool) tries to correct Nature, his own creator.
On the other hand, a careful study of synergy of the tornado and its environment makes it possible to develop technologies capable of controlling synenergetic phases of the tornado's existence without trying to "rework" Nature but using its own laws very neatly and deftly to minimize the disastrous effect of the tornado on Man and the infrastructure created by him.

Publications on the subject of "climatic" or "vortex" weapons are nothing but a myth or unsuccessful projects due to lack of knowledge like, for example, the following:

- Along with the tornado activator, prior to creation of an artificial tornado, a low-pressure (high-vacuum) corridor should be created first for the tornado to storm through on the way towards its target. In other words, it something like running before it with a vacuum cleaner.
- For creation and targeted shooting of gas (in gas medium) or liquid (in liquid medium) tornadoes, e.g. targeted electromagnetic tornadoes located in a certain way with respect to the transversal and longitudinal axes, the following factors should be taken into consideration:
    - targeted shooting of mini-tornado sets directly to a destination point will pierce the material of tightly packed dodecahedron shells ($Foam^4$) leading to energy loss of over 90%. An example is a jet plane (a fool) piercing the material of dodecahedron shells at supersonic speeds followed by shell collapsing, i.e. their recovery (structurization);
    - targeted shooting of mini-tornado sets should take into account the broken-line (like a lightning) way to a destination object, i.e. along Plato-Shikhirin channels, or dodecahedron edges. Moreover, there is a great multiplicity of such broken-line routes, therefore special ether sensors should be introduced into Plato-Shikhirin channels (Ether) with subsequent scanning of various object contact options, data processing and real-time computer building of energy-efficient minimum way to the destination object, etc.

So, Nature-saving techniques (at least ten of them) of tornado VTortex destructurization may be targeted at its:

- weakening,
- destruction (de-activation),
- cessation,
- enhancement,
- targeted change of the route of a tornado, e.g. in order to bypass vitally important objects, cities, etc., in the vertical or/and horizontal planes, etc.

It is obvious that the knowledge of VTortex tornado destructurization methods also means the knowledge of its structurization methods, i.e. actual development of

- "free" vortex energy sources;
- transport vehicle technologies (individual, collective and cargo vehicles) for transportations on Earth and other planets as well as for interplanetary and galaxy navigations based on this energy (UFO);
- information technologies as an integral part "accompanying" the tornado energy, etc.

Electromagnetic and Torsion Energy Formation

Electricity, magnetism and *torsionism* are products of the structurization[4,7] energy [32-38] and an integral part of any active "channel process", being a group of processes occurring during interaction of a fluid medium channel flow (the Plato-Shikhirin Skeleton as the 1-st phase of the working fluid medium state in Nature) with its environment (the shell material as the 2-nd phase thereof), respectively [18]. Such channel flows run in the mega-, macro-, micro- and nano-worlds of the Universe from hyperflows in Space and flows in the atmosphere, rivers and the World Ocean to fluid medium flows in biological channels of the vegetable and animal worlds and the Man's vascular system.

The channel activity products include an eternal circulation of working fluid medium in Nature, for instance, … → $\mathbf{Foam^{VTortex}}$ → $\mathbf{Foam^{4}}$ → $\mathbf{Bundle^{4}}$ → **VTortex** → $\mathbf{Foam^{VTortex}}$ → $\mathbf{Foam^{4}}$ →... [23], or, particularly in our case , fluid medium bundling formation and meandering followed by automatic generation of self-supported energy-information VTortex systems such as galaxies, tornadoes, whirlpools, toroidal biological and intelligent "packs" that generate information along with electricity and magnetism.

It should be remembered that **electricity, magnetism, torsionism, etc. are actually the working fluid medium and possess all its functional features.**
Physically, the process of development/accumulation of static electricity results from friction of stretched dodecahedrons, or Shikhirin color cells[7], combined into a flow bundle[7], or the central part of the tornado toroid, acting as a helical rolling mill for producing hailstones, snowflakes and water drops. Apart from rotating around their longitudinal axes, stretched cells rotate and advance along the helical line – the closed line of the ($3n_p$, 5) torus knot in the Plato-Shikhirin[4,7] Skeleton [4,5,17,18,37,38]. Channels are at the same time electricity and information conductors.

The Plato-Shikhirin Skeleton[7] contains:

- **the Rotor** - the central body (with an oval cross-section) consisting of water, air, ice as future raindrops, clouds and hailstones. The Rotor rotates counter-clockwise (North hemisphere) respective its longitudinal axis; and
- **the Stator** - five deformed Shikhirin cells[7] (with oval cross-sections) placed on the same circumference and rotating clockwise.

The above configuration constitutes a natural electromagnetic engine or an electromagnetic energy and information generator (Fig. 10).

A positive electrical (electrostatic) charge is accumulated in a local "thunderstorm" cloud shell formed by the central part, or the tornado helical rolling mill under pressure and high temperature conditions.
Moreover, the charge growth is in close relationship with the growth of the cloud volume: the bigger and more intensive is the cloud growth, the bigger and more intensive is the charge growth.
The charge accumulates at the surface of the cloud shell and since electricity is a working fluid medium which possesses a weight and "senses' the negative earth's charge, the charge drains to one drop point at the lower surface of the cloud.

This thing will go on until the nearest point (the negative charge) for the discharge is found at the earth's surface that will be the tornado's head.
Then the discharge corridor will be found immediately which will be a "broken" Plato-Shikhirin channel that will draw the discharge.
It should be remembered that the negative charge located, for instance, on the earth, also "senses" the positive charge of the electrified cloud, flows over the earth's surface and accumulates as a drop in convenient spots (towers, a tree, a hill, etc.) to couple with the positive charge in the form of a lightning.
Moreover, the tornado like other VTortexes such as galaxies, ball lightnings, small comets, etc. produces torsion (vortex) energy and information besides electromagnetic energy and information. Generation of torsion energy and information will be described later in more detail.

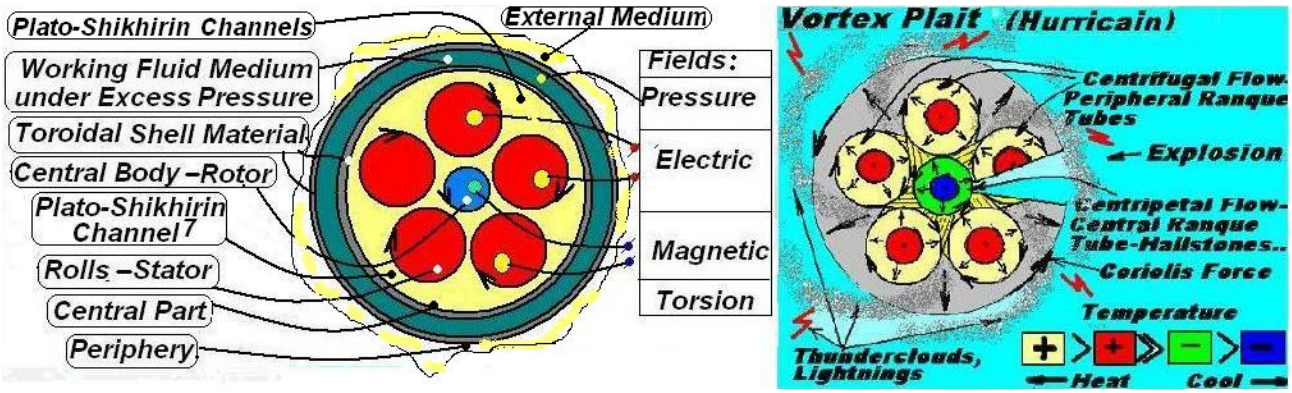


Fig. 10 The figure shows the eversible explosive radial centrifugal end – the tornado's tail - and its structure (Bundle[7]) as well as the temperature distribution in the bundle, or Ranque tubes, and the process of electricity, magnetism and torsionism formation along with "accompanying" information.

The external sparking (lightning discharges) and internal sparking (discharges between rotating rolls and the central body in different directions) are pretty well described (in his free time) by my friend and colleague Evgeniy ArSEntyEV at his website http://www.evgars.com/true.htm

Byproducts of Tornado's Activity

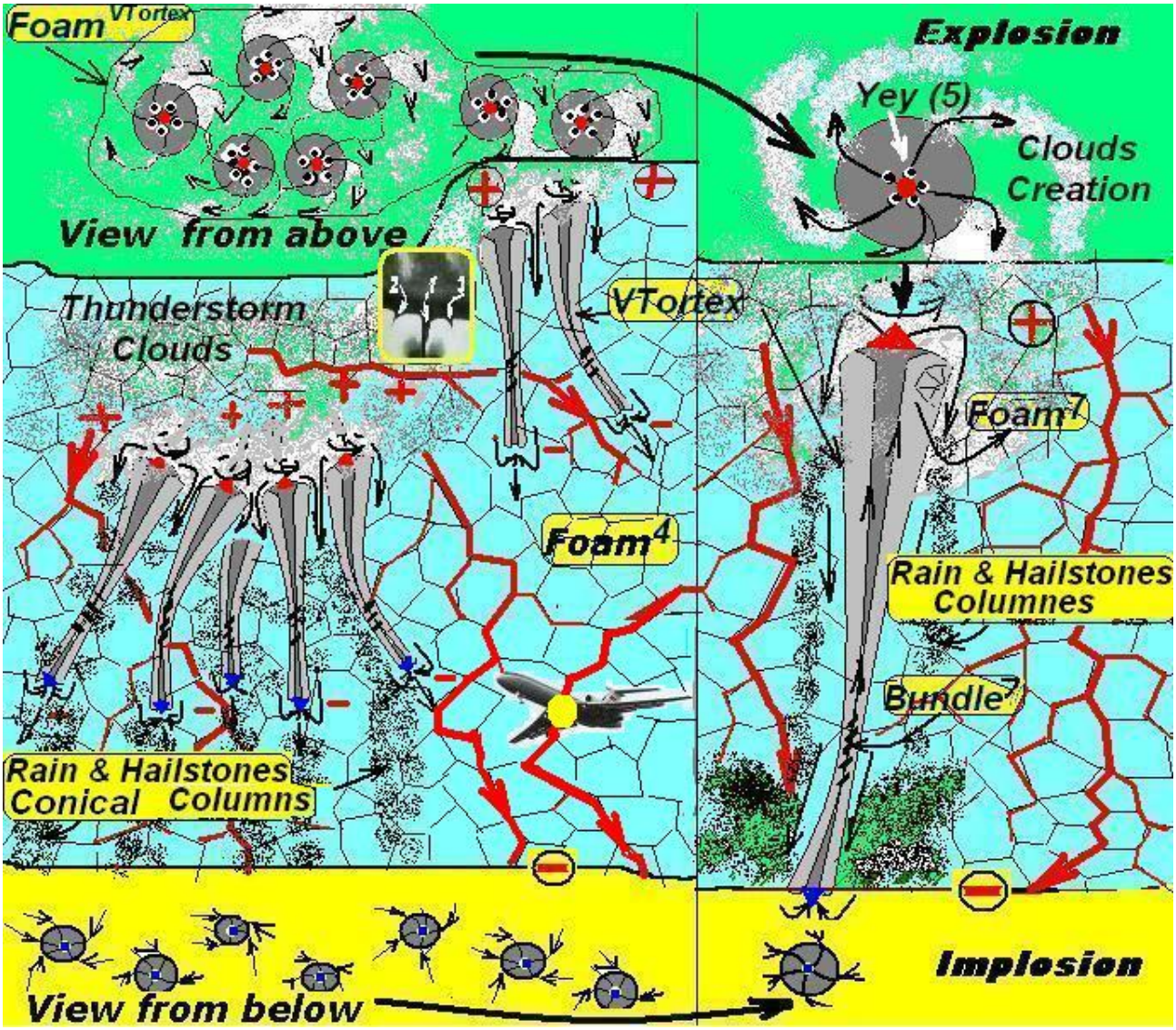
Lightnings

The lightning's outward appearance is a direct evidence of structurization of the Foam[4] as a regular form of a working fluid medium state (Fig.11); lightning formation processes are similar in the atmospheres of Earth and other planets.

A lightning is an electromagnetic discharge between static magnetoelectricity (+) accumulated in the upper part of the tornado and the earth (-).

The charge itself is accumulated as a result of friction and rolling motion between five linked branches/rolls looking like tight and elastic gas threads (stretched dodecahedrons, or Shikhirin Color Cells[7]) and the central cylindrical body rotating opposite to the branches/rolls around its longitudinal axis (Fig. 11). Together they are combined into a Flow Bundle[4,7].

The lightning, as the tree of the discharge, consists of the main "broken" trunk and branches moving in Plato channels (Fig.11).



Fig, 11 Tornado's activity by-products

Fig. 11 shows:

- a discharge between clouds electrified by a VTortex tornado and the earth (vertical direction);
- discharges between clouds created and electrified by VTortex tornados located at dufferent levels above the earth or having opposite potentials (horizontal direction);
- a mechanism of combining vortices (see Fig. 7 for additional information) into a big vortex, for instance, into a tornado.
- formation of rain and/or hailstone "hollow" cone-shaped polls or tubes by the tornado;
- the bottom middle view shows hitting an aircraft by a lightning. When the lightning discharged the aircraft was in a Plato[4] channel.

The “tree trunk” is the shortest distance covered by a discharge between a cloud and the earth or between two opposite charges. The discharge flows through edges of a super-tight pack of structured spheres – dodecahedrons or their variations.
The thicknesses of the trunk and branches of the lightning discharge increase towards the bottom of the discharge “tree”, and dimensions of polyhedrons increase along with the height parameter increasing in the atmosphere.
The direction of the discharge movement along polyhedron edges may be of three types:
- vertical direction - between electrified clouds and the earth; in this case the lightning discharge branches run at an acute angle away from the trunk;
- horizontal direction - between two electrified clouds having opposite charges; the lightning discharge branches also run at an acute angle away from the trunk;
- combination of the vertical and the horizontal types.

By analyzing the parameters of the discharge trunk and branch bends at least from 3 sides, it is possible to calculate dimensions and types of dodecahedrons or their variations or other polyhedrons.

Raindrops, snow, hailstones
Raindrops, snow or/and hailstones are formed by a two-, four- or 5-roll “helical super-cold rolling mill”, i.e. the central part of a natural eversible elastic tornado (Table 1).
Then they are ejected from the tornado’s “tail” that has a high temperature and pressure. When falling down freely, raindrops, snow or/and hailstones are sucked in (attracted) by low pressure generated by the tornado’s head (Fig. 12). Part of them is captured back by the tornado.
It should be noted that at present there are so-called artificial snow generators which “roughly” copy the production of natural snow by the tornado’s helical rolling mill.

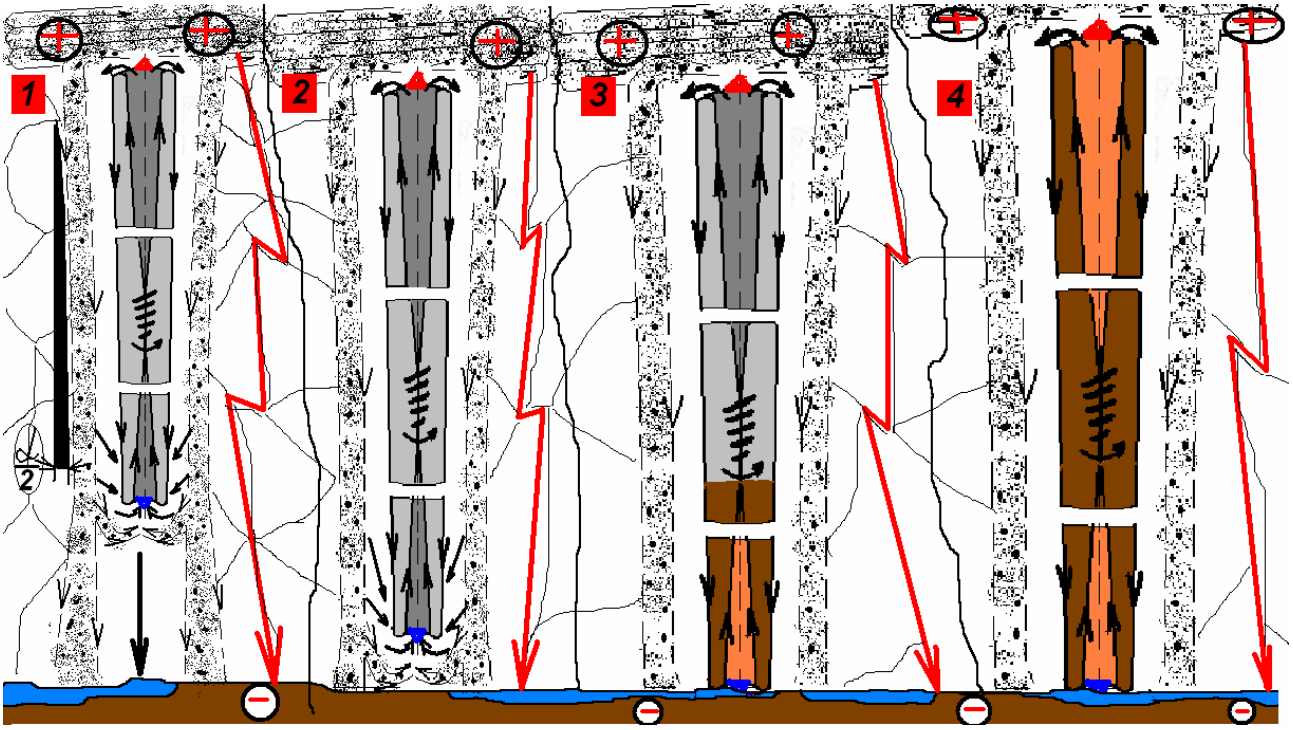


Fig. 12 Operation steps of a self-supported tornado - a cone-shaped toroid acting according to the "Bloating Law".

The tornado is powered from the following sources:

- structurization energy and information of the three-phase state of VTortex as the 3-rd regular form of working fluid medium in Nature;
  A ($3n_p$, 5) torus knot is the energy-information basis or the "genetic code" of a tornado;
- raindrops - a three-phase working fluid medium, namely the 1-st regular form of the fluid medium $Foam^4$ – **water (water and air)**
- hailstones - the solid state of the three-phase state of the 1-st regular form of working fluid medium $Foam^4$;
- three-phase working fluid medium surrounding the tornado, namely the 1-st regular form of fluid medium $Foam^4$ - **air (gas and water);**
- three-phase working fluid medium, namely water on the Earth's surface - 1-st typical form of fluid medium $Foam^4$ - **water (water and air).**

Fig. 12 shows:

- the process of production by the tornado of raindrops and hailstones that form a conical (angle α) hollow pole or a tube with the walls made, in turn, of rain and hail. The tornado in this situation is clean: transparent or white (steam);
- partial capturing by the tornado's head of rain and hailstones (the super-low pressure zone created by the tornado itself). The tornado is clean: transparent or white (steam);

- capturing by the tornado's head of air (gas and water) from the tornado's environment. The tornado is clean: transparent or white (steam);
- capturing by the tornado of the surface layer of the earth and water. The toroid shell has the color "of the earth";
- electrical discharge - a lightning "dashing" through Plato[4] channels;
- formation of steam (thunderstorm) clouds following the helical line direction, etc.

Formation of hail, rain or snow means fabrication of hailstones, "morsels" of water (rain) and snowflakes by the super-cold helical rolling method.
The raw material for the helical rolling may be water, debris, dust, various objects, animals, etc. which are dragged through the enveloping end of the elastic toroid into the toroid's central part cooled up to negative temperatures (as a result of rotation).

According to the "Bloating Law" the tornado needs more and more air and water increasing in non-linear manner [15].
The bigger is a tornado the bigger are water drops and hailstones which have more complicated shapes.

Water freezes with objects dragged into it producing an ice rod oval in the cross section. This is a work piece for the hail rolling mill. All that remained lying on the earth after a hurricane such as piles of debris, broken trees, motor cars turned upside down, dead and wounded animals, etc. is a "reject" (irregular polyhedrons) produced during the helical rolling operation. As a matter of fact, not everything captured by the tornado's head may serve as the basis for producing polyhedrons.

The density/specific gravity of a hailstone is decreased radially by concentric layers from its surface towards its core/center, i.e. the surface ice layer of a hailstone is denser/harder than its soft snow center.

In terms of technology, this may be explained as follows:
The process of hail rolling in the "twists"/turns/rolls of the central part of a tornado takes a very short time, just a few seconds, with a sharp temperature drop in this zone. Water dragged by the enveloping end, the predictor funnel^{+}, into the deformation zone freezes in fractions of a second becoming an oval-shaped body. The latter does not freeze through to its longitudinal axis/center since due to expansion of the ice volume its concentric layers move towards its surface rarefying its zone/core in the vicinity of its longitudinal axis. Hence, loose/porous snow-like ice is obtained in a space rarefied respective the environment. Simultaneously, future hailstones are roll-knobbed and calibrated.

If the number of branches/rolls of a tornado changes (from 5 to 4 to 2, etc), for instance, if the tornado loses its strength, the profile of shaping rolls also changes and so does the shape of hailstones: from regular polyhedrons to flattened or stretched faceted ovaloids.

Products of Tornado's Activities:

- Thunderstorm clouds formed at high temperatures and always accompanying the tornado only conceal its graceful slender cobra-like dancing figure.
- Thunderstorm clouds are produced and electrified **only** by tornadoes originating in the Earth's atmosphere.
- Hailstones, snowflakes, water drops are a product of tornadoes' activities only. Another source of hail-, snow- or water drop formation does not exist in Nature (at the Earth).
- Dirty hailstones with a soft loose core are a result of the tornado's interaction with the earth's surface such that the tornado is white and clear before it contacts the earth and dark and "dirty" thereafter.
- Clean hailstones with a white soft snow core result from activities of tornadoes that have failed to reach the earth and hence to interact with its surface. In other words, they exist in the atmosphere being invisible because they are "clean", and "hide" in screening clouds created by the same tornadoes.
- A lightning is a result of **only** a tornado's activity; it is a short circuit between the Earth's surface and a thunderstorm cloud in case of a vertical lightning, or between two storm clouds if it is a horizontal lightning.
- Clouds electrified by a tornado are created by the same tornado.
- After self-discharging, hence self-weakening, the tornado dies, i.e. terminates its activity.

  Water and debris which resided in the tornado's "trunk" looking like a stretched elastic torus-shaped "bag" fall onto the earth by a single lump, since the walls of the trunk lose their strength (disappear) and collapse in an instant.
- Various "byproducts" like a rainbow, ozone and the unusually blue sky after a thunderstorm are also results of a tornado's activities but appearing only after the tornado's death.
- Shaping profile cross-sections of any of the 5 rolls have a faceted shape of honey cell edges making it possible to obtain, for instance, regular polyhedrons, flattened or stretched faceted ovaloids.

Conclusion

The knowledge of synergetics or the structurization energy and information effect of a tornado as a self-supported torus mechanism makes it possible, like in the non-distant past, to create power and transportation systems at a modern level (Fig. 12), which is indeed a vital need of Mankind right now.

A customer will buy the basic set of a vortex power source as well as "attachments" at his option.
Besides, a free-of-charge follow up support will be provided. This will be similar to today's purchase of a computer and its hard- and software after-purchase support.

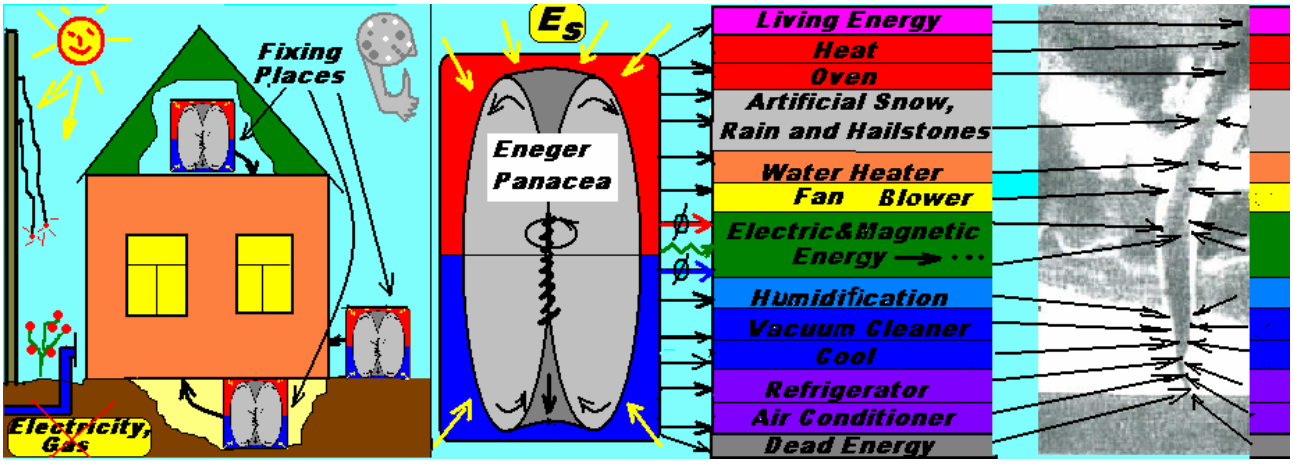


Fig. 13. The "Panacea" power system with a set of targeted attachments (in the middle) for separation, accumulation and use of additional "products" naturally produced by a VTortex (right).
The right view is a functional VTortex *scale* or the *Shikhirin VTortex wedge* of any natural VTortex in the nano-, micro-, macro- and megaworlds including a tornado, a galaxy, a small comet, a ball lightning, etc.

One of the author's future papers will be dedicated to new generation toys, games, attractions, teaching aids, technical advertising aids and alike, namely to torus-based eversible or envelopment systems since **they are indeed working models of self-supported natural VTortex systems of the nano-, micro-, macro- and megaworlds including those of a tornado, a galaxy, a small comet, a ball lightning, etc**.

Modern toys, games, attractions, teaching aids, technical advertising aids and alike are "two-dimensional", moving in two dimensions, such as the "16" game, checkers, chess, Rubik Cube, etc.; they converted the brain of a child and later of an adult to "flat" thinking that led Mankind to a conclusion that there is nothing and could be nothing but "the hydrocarbon and nuclear" worlds.

Torus toys, games, attractions, teaching aids, technical advertising aids (Fig. 14), etc, include, for instance:

- inflatable, i.e. soft/elastic eversible and enveloping toroidal shells fillable or filled with working fluid medium under overpressure. Here the folding process is present;

- made of “solid” material, e.g. silicone, of which eversible and enveloping tori are made with practically no folds;
- toric and spherical knot systems;
- assembled and disassembled spatial systems:
  - 4-dimensional Fuller;
  - 5- and 7-dimensional toroidal;
  - 6-dimensional Mobius, etc.

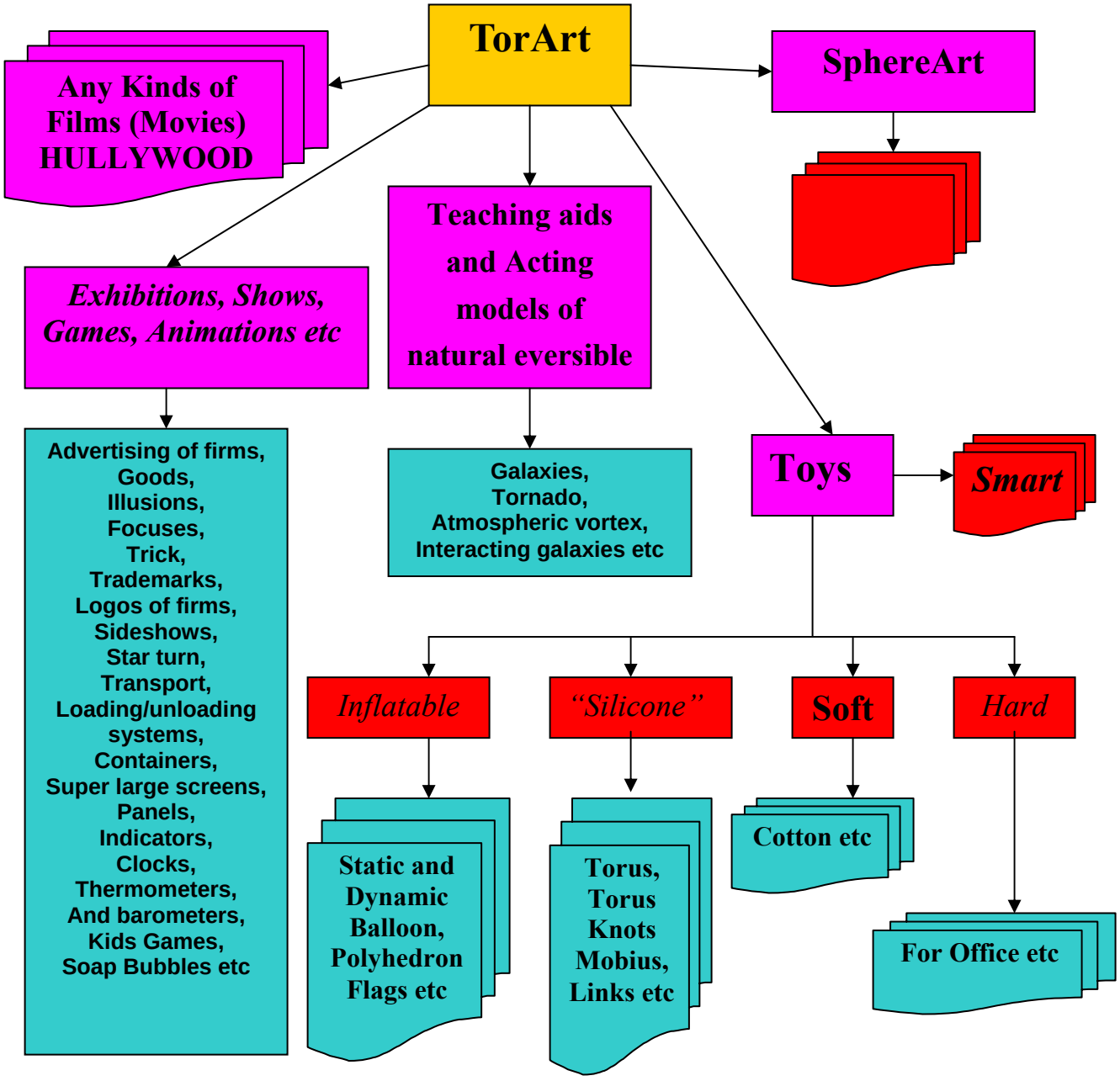


Fig. 14 TorArt

References:

1. Alik Bartholomev. Hidden Nature. The Starting Insights of Victor Schauberger. Adventures Unlimited Press.
2. The Energy Evolution, Vol.4 of the Eco-Technology series, Viktor Schauberger, ed. Callum Coats.
3. V. Shikhirin. Development Prospects of Tore Technologies, Elastic Mechanics and "Wonders" Created by Them in Nature. Proceedings of 2-nd International Scientific&Practical Conference "Tore Technologies", 21-24 Sept., 2005, Irkutsk State Technical University, plenary report, pp.3-4, www.alt-tech.org, www.evgars.com.
4. V. Shikhirin. VTortex™ as Superior Form of Fluid Medium Structurization in Nature. Proceedings of 3-rd International Scientific&Practical Conference "Tore Technologies", 23-24 Nov., 2006, Irkutsk State Technical University, pp. 158-179, www.alt-tech.org, www.evgars.com.
5. V. Shikhirin. VTortex-Galaxy as Structurer of Stellar Systems and Time (Calendars) and Cause of the Earth Climate Change. Proceedings of 3-rd International Scientific&Practical Conference "Tore Technologies", 23-24 Nov., 2006, Irkutsk State Technical University, pp. 143-158, www.alt-tech.org, www.evgars.com.
6. V. Shikhirin. Torus and Sphere: Parents of Pi, Phi and Number "7" as Basics of Matter Structurization in Nature. Proceedings of 3-rd International Scientific&Practical Conference "Tore Technologies", 23-24 Nov., 2006, Irkutsk State Technical University, pp. 131-143, www.alt-tech.org, www.evgars.com.
7. Fuller, R. Buckminster "Synergetics", 1982, Macmillan Publishing, 866 Third Avenue, New York, N.Y. 10022
8. V. Kushin. The Tornado. "Priroda" Publishers, 1988, No. 7
9. Kerry A. Emanuel, The Theory of Hurricanes, Annu. Rew. Fluid Mech 1991. 23: 179-96
10. Hose and Torus Converters. Prospects of their Application in General-Purpose Units and Mechanisms. A series of papers under general supervision of V. Shikhirin, A. Korobov, VIMI Publishers, Moscow, 1995, pp. 1-84, www.alt-tech.org, www.evgars.com.
11. Working Models, "Single-Component Toroids" (Part One), "Multy-Component Toroids" (Part Two), 2008, http://youtube.com/user/elastoneering
12. V. Shikhirin. Torus Technologies as the Basis of Elastic Mechanics. Proceedings of 1-st International Scientific&Practical Conference "Tore Technologies", 30 June–2 July, 2004, Irkutsk State Technical University, pp. 22-48, www.alt-tech.org, www.evgars.com.
13. V. Shikhirin. Toroidal Movers of Transport Vehicles. Proceedings of 2-nd International Scientific&Practical Conference "Tore Technologies", 21-24 Sept.,

2005, Irkutsk State Technical University, pp. 79-99, www.alt-tech.org, www.evgars.com.
14. V. Shikhirin. Development of Perfect Architectural and Construction Technologies (by Example of Tore Technologies) for Mankind's Survival under Conditions of Climate Cooling on Earth. Proceedings of 4-th International Scientific&Practical Conference "Tore Technologies", 24 Oct., 2007, Irkutsk State Technical University, pp. 28-49, www.alt-tech.org, www.evgars.com.
15. V. Shikhirin, V. Ionova, O. Shalnev, V. Kotlyarenko. Elastic Mechanisms and Constructions. Monograph. Scientific and Educational Publication of Tore Technologies Center, Irkutsk State Technical University, 2006, 286 pages, www.alt-tech.org, www.evgars.com.
16. V. Grebennikov. My World. Chapter 5. "Sovetskaya Sibir" Publishers, 1997.
17. V. Shikhirin. Development of Perfect Energy Sources to Ensure Mankind's Survival under Global Climate Change on Earth – Space Phase of Climate Cooling. Proceedings of 4-th International Scientific&Practical Conference "Tore Technologies", 24 Oct., 2007, Irkutsk State Technical University, pp.3-28, www.alt-tech.org, www.evgars.com.
18. V. Shikhirin. Synergetics of the Universe as Natural Perfect Self-Supported Mechanism. First Approximation. Proceedings of 5-th International Scientific&Practical Conference "Tore Technologies", 23-24 Oct., 2008, Irkutsk State Technical University, pp.22-54, www.alt-tech.org, www.evgars.com.
19. A. Filippov. The Multi-Faced Soliton. "Kvant" Library, issue 48, "Nauka" Publishers, Physics and Mathematics Dept., 1986.
20. N. Ye. Zhukovsky. The Fundamentals. "Kvant" Journal, No.4, 1971.
21. R. Wood. Vortex Rings. "Kvant" Journal, No.12, 1971.
22. S. Shabanov, V. Shubin. Of Vortex Rings. "Kvant" Library, issue 4. Home Lab Experiments. Moscow, "Nauka" Publishers, Phys. & Math. Literature Dept., 1981, p.18.
24. Knots in the Seven Color Map by Lois H. Kauffman, http://www.math.uic.edu/~kauffman/
25. Stan Tenen. Hex-Pattern 7-color map, defining a 2- 1984 http://www.meru.org/Posters/hex.html
26. G. Steinhaus. Mathematical kaleidoscope. Authorized translation from Polish. State Publishing House for technical and theoretical literature, Moscow-Leningrad, 1949, p. 9.
27. Martin Gardner. Mathematical Puzzles and Entertainment (The Problem of Four Colors), Moscow, Mir Publishers, 1999
28. www.library.wolfram.com/webMathematica/Mathematics/Knots.jsp

29. D. Goryachev, A. Voronets. Tasks, questions and sophisms. For mathematic fanciers. NITS "Regular and chaotic dynamics", Moscow-Izhevsk, 2000.
30. Danial Winter. 7 Arrows of the Heart and 7 Colors of the Rainbow, from the Hydrodynamics of the Perfect Inc 'Drop'? www.soulinvitation.com or www.spirals.eternite.com
31. M.S. Volsky. Unusual Life of Usual Drop. Nauka and Progress. "Znanye", Moscow, 1986
32. K. Perepyolkin, V. Matveyev. Gas Slurries, Leningrad, 1979.
33. V. Tikhomirov. Foams. Theory and Practice of Their Production and Destruction, Moscow, 1983.
34. A. Merkni, P. Taube. The Unstable Wonder, Moscow, 1983.
35. P. Kruglyakov, D. Yeskerova. Foams and Foam Films, Moscow, 1990.
36. A. Zimon. Amusing Colloidal Chemistry. A Peculiar World of Particles. Moscow, RADEKON, 2000.
37. V. Shikhirin. Natural "Elements" of Information and Energy as the Basis for XXI Century Engineering. ***Structurization Information and Energy***. Proceedings of the 4-th Research & Engineering Conference "Machine Building in XXI Century. Science, Education and Production Integration". May, 2007. Izhevsk State Technical University www.alt-tech.org, www.evgars.com.
38. V. Shikhirin. Natural "Elements" of Information and Energy as the Basis for XXI Century Engineering. ***Natural and Mechanical Implementation***. Proceedings of the 4-th Research & Engineering Conference "Machine Building in XXI Century. Science, Education and Production Integration". May, 2007. Izhevsk State Technical University, www.alt-tech.org, www.evgars.com.
39. P. Poluyan. Multi-Turbulent Structures in Large-Scale Liquid Flows and an Aquacyte Hypothesis, 14 October, 2004,
http://www.sciteclibrary.ru/rus/catalog/pages/6312.html