

Super Conductor by Internal Vortex Tunnel

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ABSTRACT

It is known that the motion of an Ideal fluid is described by Bernoulli's Law. Unlike an Ideal fluid, the motion of an Electric field along a Classical Conductor is described as the motion of a Real fluid with friction, cohesion and adhesion. Moving the Electric field along Classical Conductor it is stratified in lamellas with different speeds. The speed of lamellas decreases from the center to the periphery. In first moment of time appears lamella in center of Conductor with maximal speed, after time appears lamellas in both side with less speed and so on and in last moment of time appears lamellas with minimal speed in both peripheries. Thus, a Reverse wave is formed from the center to the periphery of the Classical Conductor.

The author applies her the Open Vortex Theory. It contains 2 new Axioms and 8 Laws. This report uses 1 Axiom and 3 Laws only. According Axiom1, Open vortex is obtained whenever there is uneven motion (decelerating or accelerating) along a curve. According Law5, because the Reverse wave performs a decelerating motion, it emits decelerating open vortices outward from the Classical Conductor. This is a reason the described external Electric Current emits decelerating open vortices outwards and to lose Energy warming environment. The structure of Classical Conductor contains an internal Electric field that is in opposite direction an external Electric current accompanied by the external Magnetic field.

The author proposes a Super Conductor that has an exactly orthogonal structure to the Classical Conductor. In the periphery, the material there must be a minimal Resistance and, in the center, the material must have a maximal Resistance. So, in the periphery, the Electric field will have a maximum speed and in central Tunnel it has minimal speed. Therefore, the Electric current will be internal and moves together with its internal Magnetic field in direction from periphery to central Tunnel. Thus, the losses tend to zero.

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Introduction

Bernoulli's Law for an Ideal Fluid

It is well known the Bernoulli's Law which is formulated as follows: The sum of the specific Energy of position and pressure, plus the kinetic specific Energy is constant at any given cross-section of the flow. In the pipeline, the flow Energy is equal to the sum of the dynamic, gravitational and static Pressures. Total Energy is: $V + Z + P = \text{constant}$, where V is the dynamic Pressure, Z is gravitational Pressure, P is Pressure in all directions of the volume.

Bernoulli's principle reflects the Law of

conservation of mechanical Energy with respect to an **ideal and incompressible fluid**, without losing Energy due to friction [1].

Real Fluid

a) Stratification of Real Fluid as Electric Field

Bernoulli's Law ignores the friction of the fluid along the pipe. If friction is taken into account, then the picture of fluid stratification should be considered.

Let's consider the Electric field as a type of real fluid and the Classical Conductor as a type of pipe. Due to friction and viscosity,

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the **Electric field stratifies** into different lamellas with the corresponding velocities. The stratification mechanism is the following: in the center of the Classical Conductor a field with a maximum velocity vector moves, on both sides of it a field with a smaller velocity vector moves symmetrically, etc. and at the very peripheries the both field lamellas have a minimum velocity vector (Figure 1a) [1].

b) The Electric Field Describes as the Decelerating Longitudinal Vortex

The real fluid as the Electric field involves **friction and viscosity**. Due to friction and viscosity, each lamella of the Electric field is described as a decelerating motion. The central lamella is slightly retarded, the outer lamellas become more significantly retarded, and at the peripheries the lamellas are the most retarded. This means that the Velocity gradient decreases in the direction from the center to the periphery: $\text{grad } V_i < 0$ (Figure 1a).

Description of Open Vortex Theory

Axiom1 Describes Open Vortex

The classical Electromagnetic Theory is based in a single Classical Axiom for Closed vortex (Maxwell, 1864). Therefore, all Laws of Maxwell are true only for Closed vortices that move with constant velocity [2].

In Open Vortex Theory an new phenomenon is a decelerating motion of the real fluid as an Electric field. According this new Theory the decelerating Electric field emits Open vortices outwards to the environment or to the neighboring lamellae. Exactly this Open vortex that is emitted to the environment is described by a new Axiom1 [3].

Axiom1 claims that for every Open vortex with tangent vector Velocity (E) is true: $\text{div}(\text{rot } E)$ is not (0). Therefore, every Open vortex is described by a divergence (increase or decrease) of the rotor of the tangent vector velocity (E), that is always different from zero. Or velocity is variable (increasing or decreasing) and is not constant [3].

Result: An Open vortex is always uneven, or Velocity is not constant and acceleration of Velocity is not zero.

Law1 for Volume 3D Describes how Decelerating Vortex Generates Accelerating Vortex

The open **decelerating** transverse vortex (E_{2D}^-) generates an open **accelerating** longitudinal vortex (H_{3D}^+) from inward to upward. This action takes place from the Gravity center (G) of decelerating cross vortex (E_{2D}^-) through a particular transverse-longitudinal operator for transformation ($\Delta 1^-$): $\Delta 1^-$

$$\text{Vor}(E_{2D}^-) \Rightarrow \text{Vor}(H_{3D}^+).$$

Result: The Law1 describes phenomena of Full Resonance or resonance in Space (by amplitudes) and Time (by frequencies and phases) [3].

Law5 for Volume 3D Describes Decelerating Vortex

The 3D longitudinal **decelerating** vortex is described by a multitude of 4 nonparametric equations in which: longitudinal velocity (V) decreases in (n) portions ($1/f^n$) times; the amplitude

(W), the angular velocity (ω) and the number (N) of transverse vortices in every wheel increases in (n) portions (f^n) times:

$$V - V_0 / V = -1, W - W_0 / W = 1, \omega - \omega_0 / \omega = 1, N - N_0 / N = 1,$$

where linear velocity V_0 is the starting value of v_n , amplitude of transverse vortex W_0 is the starting value of w_n , angular velocity ω_0 is starting value of ω_n , number N_0 is starting value of transverse vortices in current wheel n_n , $[n_n]$ is the closest integer: v_n, w_n and ω_n are periodic roots with period n; v_n, w_n are mutual orthogonal that fulfill the orthogonal requirement: $v_n \cdot w_n = V_0 \cdot W_0$; v_n, ω_n are mutual orthogonal that fulfill the orthogonal requirement: $v_n \cdot \omega_n = V_0 \cdot \omega_0$; $n = 0 \div \infty$; the roots v_n, w_n and ω_n and n_n are expressed as: $v_n = (1/f^n) \cdot V_0$, $w_n = f^n \cdot W_0$, $\omega_n = f^n \cdot \omega_0$, $[n_n] = f^n \cdot N_0$, (f) is Golden proportion that fulfills requirement: $f - (1/f) = 1$ [3,4].

It is well known that an equation is nonparametric if it do not depend on external parameters

Result: Decelerating vortex is described by 4 nonparametric equations that depend only of Golden proportion (f) [5].

Definition: For decelerating vortex the square of Golden proportion is: $(f^2)^n = (w_n/v_n)$. It equals the ratio between result and reason, if $W_0 = V_0 = 1$.

Or (f) is equals the ratio between current amplitude of the transverse vortex (W_i) (as result) to the current longitudinal vector (V_i) (as reason). This means that after first point ($n=1$) amplitude of transverse vortex (W_i) increases from (1) to (f) ($f=1,62$), but velocity of longitudinal vortex (V_i) decreases from (1) to $(1/f)$ ($1/f=1/1,62=0,62$) [5].

Result: The decelerating vortex transforms maximal Velocity (V_i) from starting (n_i) point to a transverse wheel with maximal Radius (W_n) in final (n_{th}) point, and an angular velocity (ω_n) and radius of rotating wheel (W_n) to maximal in final (n_{th}) step (Figure1a) [2,4].

Result: An decelerating vortex emits the Primary decelerating vortices (called decelerating Quanta) from itself to the outside or they emit warm to environment.

Law6 for Volume 3D Describes Accelerating Vortex

The longitudinal **accelerating** vortex in 3D is described by a multitude of 4 nonparametric equations in which: longitudinal velocity (V) **increases** in (n) portions (f^n) times, the amplitude (W), the angular velocity (ω), and the number (N) of transverse vortices in current wheel, **decreases** to zero in (n) portions ($1/f^n$) times:

$$V - V_0 / V = 1, W - W_0 / W = -1, \omega - \omega_0 / \omega = -1, N - N_0 / N = -1,$$

where the linear velocity V_0 is the starting value of V_n , amplitude of transverse vortex W_0 is the starting value of w_n , angular velocity $w \omega_0$ is starting value of w_n , number N_0 is starting value of n_n , the roots v_n, w_n and ω_n, n_n are expressed as: $v_n = (f^n) \cdot V_0$, $w_n = (1/f^n) \cdot W_0$, $\omega_n = (1/f^n) \cdot \omega_0$, $n_n = (1/f^n) \cdot N_0$; (f) is a Golden proportion that fulfills the requirement: $f - (1/f) = 1$, v_n, w_n are periodic roots with period (n), (Figure 2a) [2,3].

Definition: For accelerating vortex the square of Golden

proportion is: $(f^2)^n = v_n / w_n$. It is the ratio between result to reason, or between the current longitudinal vector (V_i) (as result) to current amplitude of the transverse vortex (W_i) (as reason) if $W_0 = V_0 = 1$ [5].

Result: An accelerating vortex sucks in the Primary accelerating vortices (called accelerating Quanta) from the outside, from environment towards itself.

Description of Classical Conductor According Open Vortex Theory

The Missing in the Description of Classical Conductor

The Classical Conductor is made of a metal which has a crystalline structure and contains free electrons. Until now it was considered that the movement of the Electric field is frictionless and without viscosity between the lamellae. Therefore, until now the presence of an Internal structure of the Electric field was neglected.

In reality the internal structure of the field is shaped by friction, viscosity, adhesion and cohesion. This real structure is described by Open Vortex Theory. The Internal structure of the Electric field is expressed by **Velocity gradients** between the adjacent lamellae, from center to periphery. This velocity gradients are negative: $\text{grad } V_i < 0$ [3,4].

What is Unexplained

The fact that electrons and Electricity field move against the Electric current remained unexplained. This is due to neglect of stratification in speeds (velocity gradients) of the Electric field. It is not explained of the fact that the decelerating external **Electric current radiates heat** outside the Classical Conductor and how it happens. It misses explanation of why are the losses in the Classical Conductor. It is not clear also what is necessity when we transport 50 hertz Electricity current need to increase the Voltage in order to reduce losses.

Description of Inverse Wave as External Electricity Current

In the center of the Classical Conductor the speed of the central Electric vector V_1 is maximum. On both sides the speed V_2 is smaller and gradient is negative. By connecting velocities V_1 with V_2 and V_3 etc. we will get a decelerating internal Electricity current. It continues in opposite direction as decelerating external Electricity current along surface.

Result: If connect: V_1, V_2, V_3, \dots , we obtain internal decelerating Electricity Current.

According to Law5 of Open Vortex Theory this decelerating vortex emits decelerating transverse Primary vortices called Quanta with negative acceleration outward to the environment (Figure1a).

Result: The decelerating external Electric Current emits decelerating transverse Primary vortices called Quanta with negative acceleration.

Result: The direction of the external Electric Current (I_i) is opposite to the direction of internal Electric field (E_i) and electrons (e^-).

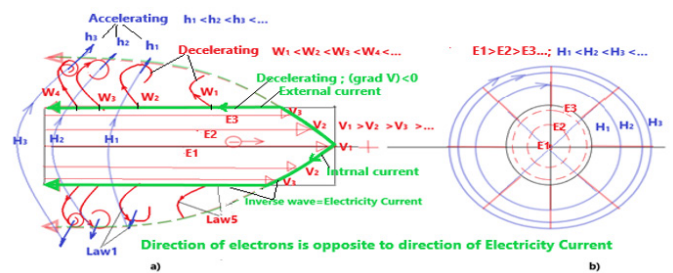


Figure 1: a) Decelerating internal and external Electricity current (I_i), Longitudinal vortex(h_i) (Law1) and Transverse vortex (W_i) (Law5), b) Magnetic vortex (H_i)

Description of Magnetic Field as External Field for Classical Conductor

According to Law 1, the described decelerating Primary transverse vortex, or Quantum with negative acceleration, generates in its center a longitudinal accelerating vortex (h_i). It has a positive acceleration from the center of Primary transverse vortices (W_i) to upwards and it is perpendicular in volume 3D to the plane 2D of the Primary transverse vortex.

Result: The accelerating vortex (h_i) is perpendicular to decelerating Primary transverse vortex (W_i) (Quantum with negative acceleration).

Result: The direction of accelerating vortex (h_i) can find by Right Hand Rule.

When all elementary acceleration vectors (h_i) pointing in the same direction are connected, then a **Closed vortex** is obtained describing the Magnetic force circles. It is they who are described by Maxwell in the single Axiom and Laws of Classical Electrodynamics [2].

Result: All Magnetic field (H_i) rotate to direction which find by Right Hand Rule.

In the case of Figure 1, all vectors of (h_i) point to the right, if the observer looks against the movement of electricity field. The (H_i) direction is found by the Right Hand Rule.

Result: The Right Hand Rule claims that if thumb of righthand point direction of Electric field, then the folded fingers point direction of Magnetic field.

Thus, accelerating longitudinal vortices (h_i) outline the closed circle of Magnetic force lines (H_i) which are located outside the Classical Conductor.

Result: The Magnetic field (H_i) makes Closed circles which are located outside the Classical Conductor.

Result: The external Magnetic field carry losses in conduction by Classical Conductor.

Because Magnetic field is outside of Conductor it is emitted Energy losses to environment.

Description of Super Conductor According New Open Vortex Theory

Construction of Super Conductor

a) Super Conductor has orthogonal construction than Classical Conductor

We saw that in Classical Conductor, because of Resistance, viscosity, adhesion and cohesion between different layers their Velocities are different. In central layer Velocity is maximal because Resistance is minimal. In outer layers velocity are less, because Resistance is more and soon. At peripheries Velocities are minimal because Resistance is minimal (Figure 1a).

Next, we will construct the orthogonal Super Conductor with orthogonal construction to Classical Conductor. In the Super Conductor center should has maximal Resistance (minimal Conductivity). But in periphery or at border to environment, it should have minimal Resistance (maximal Conductivity) (Figure 2a).

Maximal Resistance (minimal Conductivity) in center we can achieve by using special alloy (kanthal) or by special ceramic. Minimal Resistance (maximal Conductivity) in periphery we can achieve by using conductive metals (copper, silver or gold).

b) Inverse De-lamination:

In Super Conductor the internal also Electricity field stratifies (delaminates or makes layer separation) in vectors with different speeds. But it is orthogonal to Classical Conductor.

- In center velocity V_1 is minimal. The reason is that in center (central Tunnel) is composed by the material of the **highest Resistance** alloy (kanthal).
- On both symmetrical sides have lamellas with sharp bigger velocities V_2 . The reason is that both symmetrical sides are composed the material of **less Resistance** and so on.
- On both symmetrical periphery borders have lamellas with the biggest velocities V_3 . The reason is that the periphery borders are composed the material of the **least Resistance** metal (copper, silver, gold) (Figure 2a).

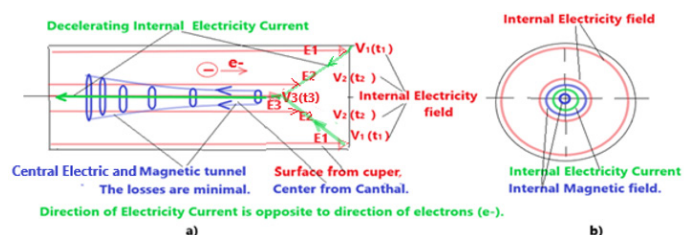


Figure 2: a) Electricity field and Electricity Current are in opposite direction; Magnetic field is in central tunnel; b) Electricity Current and Magnetic field are concentrated in center

Advantages and Disadvantages of Super Conductor

In Super Conductor the Electric field is also stratified. But the speed is maximum at the periphery (V_1) and the speed is minimum at the center (V_3) (Figure 2a). The reason is that at the periphery this Super Conductor is made of a metal with high Conductivity or **low Resistance**. The center is made of an alloy with low Conductivity or **high Resistance**. Thus, the Electric field flows along the periphery with maximum speed (V_i) in the same direction as electrons (e^-).

The Electric current is constructed by decelerating lamellas in direction from periphery to center (to central Tunnel) Thus Electricity current becomes internal in direction from periphery to center. The internal Electricity current continues moving through central Tunnel in direction opposite to electricity field and electrons (e^-).

Result: The Electric current becomes internal because it moves from periphery to central Tunnel and it does not make losses outside to environment.

The internal Electric current passes from a layer of low Resistance on the periphery, through layers of increasing Resistance, to the central layer of maximum Resistance

Due to increasing Resistance, the Electric current decreases (gradient less than zero: $\text{grad } V_i < 0$). Or the internal Electric current becomes a decelerating internal Electric current.

Result: The Electric current becomes decelerating due to increasing Resistance from periphery to central Tunnel.

Because it decelerates it emits (according Law 5) although small transverse vortices as decelerating thermal Quanta in the internal Tunnel.

Result: The internal Electric current emits small decelerating Quanta and heats the central Tunnel even if minimal.

It is extremely positive that the Magnetic field created by the internal Electric current is also internal and flows also through central Tunnel. Therefore, the Magnetic field also does not create energy losses.

Result: The Magnetic field does not make losses outward, because it is internal and moves through central Tunnel.

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