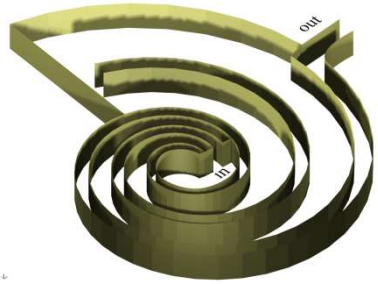
the general science journal

Antonio Ruggeri Dr. Ing.

Roma University (Italy)

modexp@iafrica.com




# EX SPIRA AQUA MUNDA

## In memory of my son Giovanni

5-Jan-2018

To my wife FRANCESCA

and my daughter AMANDA

RUGGERI"S Universal Formula of Dissipation

# Paper 2 OF 3

(formula basata sull'esistenza dell'Ether/ESF)

## Ether/ESF, Ruggeri's formula of Universal dissipation in the Universal Dynamic Science

The epitome of Kepler Third Law is in the Ruggeri's formula of Universal dissipation which explains the dissipation in Universal terms, based on existence of the Ether/ESF in the Universal Reality, it uses the GRAVITATIONAL RATIO OF DEPRESSION at the surface of a gravitational mass and the limit dissipation of a MASS IN CONDITIONS OF BLACK HOLE in the Universal Reality

## UNIVERSAL GRAVITATIONAL

## FORMULA OF DISSIPATION as developed by

## A.RUGGERI

## (based on the existence of the Ether/ESF)

The gravitational ratio of depression over the surface of a gravitational mass $M_{LGM}$ is: $\overline{\overline{\varepsilon}}(R)=\frac{v(R,\rho)^2}{c^2}[-]$ consists of a percent measure related to fixed presence in Space of substance at density $\rho_{ESF}=1\left[\frac{Ton}{m^3}\right]$ in the unit of Euclidean volume in cubic metres. It represents "in Universal terms" the depression in respect of 1 on the phase ESF inside the unit of volume occupied by the Ether/ESF, caused by the radial passage at constant speed 1[m/1"] of the flow of ESF over the surface of the mass M(R,ρ) .

The value $0<\overline{\overline{\varepsilon}}(R)<1$ is in reference to the maximum value of depression $c^2$ to which the (IP) particles constituting the phase ESF of the Ether/ESF contained in the unit of volume can be subjected, is a measure of the expansion to which they undergo with the increase of the flow.

When the gravitational absorption by a mass M causes a maximum flow over M surface, it induces on the unit of volume of Ether/ESF the maximum depression $c^2$ (to which corresponds maximum elastic expansion $c^2$ of the (IP) particles) and consequent limit value $\overline{\overline{\varepsilon}}(R_{Sch},\rho_{Sch})=1$.

## An example of the use of the ratio of depression of the phase ESF of the Ether/ESF

An example of the validity (truth) exposed in the theory based on the existence of Ether/ESF in the Universal Reality, connects the ratio of depression $\overline{\overline{\varepsilon}}(R,\rho)$ at the surface of the mass M(R,ρ) with the absolute Universal limit of dissipation of a generic mass $M_{Sch}$ (which being a Black Hole is a constant value): (note: in a Black Hole or $M_{Sch}$, the ultimate condition of depression of the (IP) particles over its surface is $c^2$).

### Universal Limit of dissipation for a mass $M_{Sch}$ (or BH):

$$F_{D-BH}=\frac{2\pi\cdot c^4}{k}=6{,}07e40\left[\frac{kJ}{1''}\right]$$

Note: the $F_{D-BH}$ is dissipation limit valid also for any Black Hole including the special mass $M_{Sch\text{-}Rug}$.

Using the gravitational formula of dissipation in a gravitational mass M(R,ρ) in function of the gravitational flow and of the combined effects caused through the mass (by the associated depression) in the theory based on the existence of the Ether/ESF we get a standard Universal expression of dissipation for any mass M(R,ρ) inside the Universe:

$$F_{D-M_{LGM}}=\frac{1}{2}\frac{k\rho R}{3}\frac{\left(\frac{k\rho R^2}{3}\right)}{c^2}\frac{4}{3}\pi R^3\rho\left[\frac{kJ}{1''}\right]$$

for $$\overline{\overline{\varepsilon}}(R,\rho)=\frac{\left(\frac{k\rho R^2}{3}\right)}{c^2}=\frac{v(R,\rho)^2}{c^2}$$

the above equation can be furtherly developed into a more compact one which results into one in function of the product of the cube of the gravitational ratio at the surface of M(R,ρ) and by the constant limit of dissipation $F_{D-BH}$ valid for any Black Hole:

$$F_D(M)=\left(\frac{k\rho R^2}{3c^2}\right)^3\frac{2\pi\cdot c^4}{k}=\overline{\overline{\varepsilon}}(R,\rho)^3\cdot\frac{2\pi\cdot c^4}{k}\quad\left[\frac{kJ}{1''}\right]$$

The above equation represents a formula based on the existence of the Ether/ESF since the ratio $\overline{\overline{\varepsilon}}(R,\rho)$ is a measure of expansion of the particles (IP), belonging to the ESF, under local depression caused by the flow of the same ESF whilst absorbed by the gravitational mass (as per theory of the existence of the Ether/ESF) :

Presentation of:

## RUGGERI's UNIVERSAL FORMULA OF DISSIPATION in a gravitational mass $M(R,\rho)$ in function of the gravitational ratio based over the theory of existence of the Ether/ESF:

© $$F(M)_D=\overline{\overline{\varepsilon}}(R,\rho)^3\cdot F_{D-BH}\left[\frac{kJ}{1''}\right]$$ ©

The above value of dissipation is valid in any case (for any gravitational mass) but a case of particular interest regards the mass "presented here as Universe in status of BH in expansion over the time". :

$$M'_{Sch}\left(R'(t)_{Sch},\rho'(t)_{Sch}\right) > M(R_{Sch-Rug},\rho_{Sch-Rug})$$

This Universe M'$_{Sch}$ in expansion, produces constant Universal limit dissipation $\left(F_{D-BH}\left[kJ/1''\right]\right)$ which *due to its BH character* remains inside it and is constantly summed up with the gravitational absorption of the phase ESF:

$$M'_{Sch}\left(R'(t)_{Sch},\rho'(t)_{Sch}\right) > M(R_{Sch-Rug},\rho_{Sch-Rug})$$

Since absorption goes to increase the value of the mass $M'_{Sch}$ and dissipation doesn't come out of it, by consequence its total mass value increases continuously, whilst, at the same time, to maintain at its surface the Schwarzschild condition, $M'_{Sch}$ needs to be in continuous expansion over the time:

$$R'(t)_{Sch} > R_{Sch-Rug} \qquad \rho'(t)_{Sch} < \rho_{Sch-Rug}$$

We have that:

($INPUT = k \cdot M'_{Sch}\left(R'(t)_{Sch},\rho'(t)_{Sch}\right)\left[\frac{kJ}{1''}\right]$), which is gravitational ABSORPTION of the phase ESF (transformed into physical mass) is going to increase the mass of the Universe and is larger than the constant dissipation

$$> \underline{OUTPUT = \left(F_{D-BH}\right)\cdot\left[\frac{kJ}{1''}\right]}$$

Note: also that the OUTPUT or DISSIPATION $\left(F_{D-BH}\right)$ since the Universe is a BH is now permanently trapped in time as inertial expanded mass (Heat) which is the evidence of presence of particles of expanded mass in scalar status (moving c inertial speed, underside the boundary of the spherical surface of the Universe expanding in time):

$$M'_{Sch}\left(R'(t)_{Sch},\rho'(t)_{Sch}\right)$$

The radius of the Universe now in expansion as a Black Hole is $R'(t)_{Sch}$ and the density is $\rho'(t)_{Sch}$ both function of the time, the Schwarzschild condition in terms of expansion of the (IP) particles, in time, inside the Unit of volume of the Ether/ESF has to be presented in the following way:

$$\overline{\overline{\varepsilon}}\{R'(t)_{Sch}, \rho'(t)_{Sch}\} = \frac{\frac{k}{3}\rho'(t)_{Sch} R'(t)^2_{Sch}}{c^2} = 1$$

In the above equation results evident that in the Schwarzschild condition the $R'(t)_{Sch}$ and the density $\rho'(t)_{Sch}$ are now dependent from the time elapsed from the instant in which the mass M'$_{Sch}$=M$_{Sch\text{-}Rug}$ carried on expanding the volume occupied when at its surface reached a condition of maximum expansion $\overline{\overline{\varepsilon}}\{R(t), \rho(t)\} = 1$ of the (IP) particles.

Note: <u>regarding the Ether/ESF theory of existence</u> : The $F_{D-BH}$ is expanded mass in equivalent units of [kJ/1"], is mass made up of indefinable inertial particles moving (haphazard) at c maximum inertial speed in a status of existence in equilibrium in Space-Time (is Heat) under the external surface of the Expanding Universe which is now behaving permanently as a mass M'(t)$_{Sch}$.

Note: we must here underline the fact that from the Universe in expansion nothing comes out, since over its surface, the unit of volume subjected to maximum depression, contains at maximum (100%) expansion, the (IP) particles of the phase ESF:

$$\overline{\overline{\varepsilon}}\{R(t), \rho(t)\}_{BH} = \frac{c^2}{c^2} = 1 \left[\frac{m^3}{m^3}\right]$$

Which are stopping the Heat produced inside the spherical surface of radius R(t)$_{BH}$ from coming out as dissipation, in the radial direction, under absorption, as light, by the external phase ESF of the Ether/ESF..