

MAXWELL'S ERROR (1864) THE GREAT ORIGINAL SIN OF MODERN PHYSICS

IN VACUUM

A) ABSENCE OF CHARGES $\Rightarrow \sum_{i=1}^N |Q_i| = \sum_{i=1}^N Q_i = 0$

B) PRESENCE OF DIPOLES $\Rightarrow \sum_{i=1}^N Q_i = \sum_{i=1}^{N/2} (+Q_i) + \sum_{j=1}^{N/2} (-Q_j) = 0 \neq \sum_{i=1}^N |Q_i| = NQ$ with N an even natural number

MAXWELL EXPRESSES ITS EQUATIONS IN THE VACUUM

PLACING IN THEM $\sum_{i=1}^N Q_i = 0$ in terms of charge density he poses: $\rho = \frac{dq}{dV} = \frac{\sum_{i=1}^N Q_i}{V} = 0$

in its electromagnetic equation: $\text{div} \vec{E} = \frac{\rho}{\epsilon_0} = 0$

WITH THIS CONDITION, HE OBTAINED THE EQUATIONS OF ELECTROMAGNETIC WAVES:

$\nabla^2 \mathbf{E} - \epsilon\mu \frac{\partial^2 \mathbf{E}}{\partial t^2} = 0$ $\nabla^2 \mathbf{B} - \epsilon\mu \frac{\partial^2 \mathbf{B}}{\partial t^2} = 0$ where $c = \frac{1}{\sqrt{\epsilon_0\mu_0}}$ c is the speed of light in vacuum.

They include the description of the light. The experimental observation a few years later of other e.m. waves, different from light, confirmed the magnitude of the prediction of such e.m. radiation.

BUT MAXWELL DEDUCED THAT THEY WERE WAVES OF ELECTRIC AND MAGNETIC FIELDS TRAVELING IN THE VACUUM FREE BY SOURCES, THAT IS WITHOUT, WITHOUT SOURCES OF THOSE FIELDS CONTRARY TO WHAT UNTIL THEN OBSERVED AND THEORIZED FOR ALL ELECTRIC AND MAGNETIC FIELDS; THEREFORE WITHOUT TRAVELLING CORPUSCULAR SOURCES;

BUT MATHEMATICS SAID THAT THIS COULD NOT BE AFFIRMED IMMEDIATLY SINCE

THE CONDITION SETTED, $\sum_{i=1}^N Q_i = 0$, IS IMPLICATED AS MUCH BY (A) AS BY (B)

THE UNEXPECTED DISCOVERY OF PHOTONS IN THE YEAR 1900, ENERGY PACKAGES ASSOCIATED WITH THE ELECTROMAGNETIC RADIATION WITH IT TRAVELING, WAS ALREADY THE EXPERIMENTAL RESULT THAT

INVOLVED \Rightarrow (A) false et (B) true

but since no one had noticed the existence of (B), no one understood the true meaning of those photons! Maxwell had started in his mind from (A), but he did not notice that his wave equations obtained were also compatible with (B). Nature had to say then with the "experiment" which hypothesis was the true one. Shortly after, showing us the photon Natura told us that, of the two, the true one was the (B) hypothesis! All this in confirmation and continuity even with what, until Maxwell, had been observed and theorized, that is the electric and magnetic fields always need sources to exist, and these sources are electric charges!!

Today the observation of a physical-mathematical theoretical structure coherent as with all the properties of the photon, as with the electric dipoles of the hypothesis (B) as sources of the e.m. wave fields, the Double Helicoidal Model of the Photon, developed by the writer in the first years of the 21st century, allowed us, 150 years later, in 2014, to discover this very simple but immense error, on which as foundation stone countless theories and much of the theoretical vision of physical reality were constructed in the thinking of the whole humanity ... but the real Reality was another, more beautiful, simpler, more coherent, more intelligible, more natural!

