Translation into English: Chapter 2 - Catalogue of Errors for Both Theories of Relativity

from the German documentation of G.O. Mueller

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F: Electromagnetism / Error No. 2

Albert Einstein based his STR on Maxwell's electrodynamics, which has a series of flaws that thus also become flaws in the STR

According to Wesley (1987, p. 193), Maxwell's (otherwise very successful) theory failed in the following points:

(1) It violates Newton's third law, because it is based on the Biot-Savart law (or the Lorentz force).

(2) As a consequence of (1) it can lead to contradictory or absurd results, e.g. the non-conservation of energy.

(3) It does not agree with Cleveland's experiment (1936), which confirms the validity of Newton's third law.

(4) It contradicts Ampère's original law of energy. It denies the strong repulsion between currents moving in the same direction. Ampère's original law of energy, however, has been well confirmed experimentally (Graneau; Pappas; Wesley).

(5) It does not give the correct force for the Ampère bridge.

(6) Its validity is explicitly limited to "closed current loop sources".

(7) It can give no terms of reference for the velocity of charges and electromagnetic waves.

(8) It describes the induction only for "entire closed current loops".

(9) It does not explicitly designate the function of absolute space or of the ether. Galeczki / Marquardt (1997) discuss the problems in very great detail. Some of their main points of criticism on the use of Maxwell's theory:

(1) If one separates Maxwell's equations from their explicit and fundamental reference system (Maxwell's ether) and wishes to apply them as valid to any inertial system, one needs transformation equations, such as the "Voigt-Larmor-Poincaré-Lorentz-Einstein transformation". Since the STR first came into being with this transformation, the STR can be proven by "no electromagnetic (and thus also no optical) experiment" (p. 162).

(2) The aim of constructing, with the STR - versus Maxwell - complete reciprocity (relativity) in the magnet-conductor system, was never achieved. "All electrodynamic laws were formulated for the only available reference system associated with our earth and never for any phantom laboratories travelling at a speed of almost c relative to our planet" (p. 164).

(3) The limits and inherent paradoxes of Maxwell's theory and its effects on the STR (p. 167 ff).

It is not unimportant that Maxwell's theory was developed on the basis of the ether hypothesis. He saw his equations as the "dynamic theory of the ether" (quote in keeping with Galeczki / Marquardt, p. 160). The same holds for the Lorentz theory. The difficulties of the STR are due partly to the attempt, at all costs, to

negate the ether presentation as outdated, although irrefutable findings allow one to conclude the existence of a medium or an absolute reference system.

Wesley, James Paul: Weber electrodynamics with fields, waves, and absolute space. In: Progress in space-time physics. Ed.: J. P. Wesley. 1987, pp 193-209. - Galeczki / Marquardt 1997 (pp 159-172).