

Conclusions not yet drawn from the unsolved 4/3-problem.\\ How to get a stable classical electron.

Tuesday 11 February 2025 12:35 (20 minutes)

It has been known for over 100 years that there is a discrepancy between Maxwell's electrodynamics and the idea of a classical electron as the "atom" of electricity. This incompatibility is known under the terms 4/3 problem of the classical electron and radiation reaction force and was circumvented in the currently most successful theories, the quantum field theories, by limit value considerations, by the mutual subtraction of infinities, i.e. by purely mathematical methods that eliminate obvious contradictions, but are not really based on an intuitive understanding and can therefore never really be understood by the physically interested public. The actual cause of the problems mentioned lies in the instability of the classical electron. Stabilization cannot be achieved within the framework of Maxwell's electrodynamics. This raises the question of what a minimal change to the fundamentals of electrodynamics should look like, which Maxwell's theory contains as a limiting case. A detailed analysis of the 4/3 problem points to models that fulfill these requirements.

Author: FABER, Manfred

Presenter: FABER, Manfred

Session Classification: Talks - Tuesday