

The dynamics of falling charge in gravitational field

The topic of a falling charge in gravitational field had surged quite a few times for the past decades. The equivalence principle was found to bring out different result from uniformly accelerated charge while concerning the radiation of the charge. The puzzle is still alive up to date. The problem lies in the heart of linking the electromagnetism with gravity, thus of unifying them. And extensively, it determines the understanding of the relationship between micro-interactions and gravity, as well as relationship between the Higgs particle and gravity. The past investigations have pointed to a quantum-gravitational motivation but using a classical point-charge model. In this paper we endow the charge with total quantum characteristics. Such model unveils the nonlocal aspects of a quantum charge, which masks the radiation essence while putting it in different coordinate-reference systems.

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