



Contribution ID: 23

Type: **Talk**

Dimensional Reduction of Gauge Theories and Quantum Simulations

Monday, 23 May 2022 14:00 (1 hour)

We derive and discuss one- and two-dimensional models for classical electromagnetism by making use of Hadamard's method of descent. Low-dimensional electromagnetism is conceived as a specialization of the higher dimensional one, in which the fields are uniform along the additional spatial directions. We then consider two-dimensional models for a charged spin-1/2 particle, both in the free case and in the presence of the electromagnetic field, by applying the same reduction technique. The basic properties of these theories, as well as their relation with existing models for two-dimensional matter, are discussed. We focus on the relevance of these findings for the quantum simulation of (lattice) gauge theories.

Primary author: Prof. PASCAZIO, Saverio (University of Bari, Italy and INFN Italy)

Presenter: Prof. PASCAZIO, Saverio (University of Bari, Italy and INFN Italy)

Session Classification: Talk