Contribution ID: **59**　　　　　　　　　　　　　　　　　　　　　　　　Type: **Vídeo-Poster**

Topological BPS vortices in a Chern-Simons-CP(2) model in the presence of magnetic impurities

Thursday 9 December 2021 16:05 (10 minutes)

We study the existence of BPS vortices in a Chern-Simons-CP(2) model in the presence of magnetic impurities. The minimization of the energy via the Bogomol'nyi-Prasad-Sommerfield (BPS) formalism allows us to obtain the first-order differential equations (or BPS equations) and the corresponding Bogomol'nyi bound. The magnetic impurity chose for our study is a Gaussian-type, then the numerical solutions of the BPS equations through the finite-difference technique verifies the occurrence of nonmonotonic regular solutions. Such a nonmonotonicity produced by the magnetic impurity induces the flipping of the magnetic field, and consequently, it also affects the electric sector.

KEYWORDS: TOPOLOGICAL, BPS VORTICES, CHERN-SIMOS, CP(2) MODEL.

Authors: Ms C. ALMEIDA, Marcos Vinícius (Universidade Federal do Maranhão); Dr DA HORA SANTOS, Carlos Eduardo (Universidade Federal do Maranhão); Dr CASANA SIFUENTES, Rodolfo Alvan (Universidade Federal do Maranhão); Dr KRUSCH, Steffen (University of Kent)

Presenter: Ms C. ALMEIDA, Marcos Vinícius (Universidade Federal do Maranhão)

Session Classification: Apresentações de vídeo-pôsteres