

Modification of meson properties in the vicinity of nuclei

Saturday, 31 May 2014 15:00 (2:00)

Collaboration

Abstract content

We shall discuss to what extent the properties of pseudoscalar and vector mesons (e.g. η , ω) bound in mesoatomic systems can become modified due to very strong static electromagnetic fields present in the close vicinity of the nucleus surface. Using the analogy with the behavior of ortho-positronium decaying in the magnetic field, we suggest that quantum superposition of spin-singlet and $m_z=0$ triplet states of the quark-antiquark pair becomes the meson ground state in strong magnetic field. Consequently, conservation of quantum numbers (e.g. C-parity) may become affected in decays of mesons, if bound to specific nuclei.

Primary author(s) : FILIP, Peter (Institute of Physics SAS)

Presenter(s) : FILIP, Peter (Institute of Physics SAS)

Session Classification : Poster Session