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Meson properties from mesic atoms and mesic nuclei

Tuesday, 3 June 2014 12:00 (0:30)

Collaboration

Abstract content

Meson properties are believed to have close connection to the fundamental theory, QCD, and have been studied for a long time both theoretically and experimentally. In this talk, we study the recent research activities in this field and consider mainly the deeply bound pionic atoms and the $eta(958)$ mesic nuclei. We report the new possibilities of the spectroscopic study of the pionic atoms using the (d,^{3}He) reactions. We consider the (d,^{3}He) reaction at finite angles to produce the atomic states with different angular momenta and on the odd-neutron nuclear target to produce the pionic states in the even-even nucleus which has a well-known neutron distribution. As for the $\eta(958)$ mesic nuclei, we summarize the recent research activities on the $\eta(958)$ meson property in nucleus and report the possible formation of the $\eta(958)$ mesic nuclei by the (p,d) reactions in detail.

Primary author(s) : HIRENZAKI, Satoru (Nara Women's University)

Presenter(s) : HIRENZAKI, Satoru (Nara Women's University)

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