EuNPC2015



Contribution ID: 162 Type: Oral

X-rays of light kaonic atoms: SIDDHARTA and future

Monday, 31 August 2015 17:45 (15 minutes)

The X-ray measurements of kaonic atoms are important for understanding the low-energy QCD in the strangeness sector. Within then SIDDHARTA experiment we studied the X-ray transitions of 4 light kaonic atoms (H, D, 3He and 4He) using the DAFNE electron-positron collider at LNF (Italy). The currently most precise values of the shift and width of the kaonic hydrogen 1s state were determined, which are now being used as fundamental information for the low-energy K-p interaction in theoretical studies. The yields of kaonic hydrogen K-series transitions and of the kaonic He3 and He4 L-series were measured, the upper limit of the X-ray yields of kaonic deuterium was determined, important for future K-d experiments. The shifts and widths of the kaonic 3He and 4He 2p states were analyzed, settling open points in this issue. In the contribution, the experimental approach and the results of SIDDHARTA will be presented, along with plans for new experiments on kaonic deuterium.

Primary author: CARGNELLI, Michael (Austrian Academy of Sciences - Stefan Meyer Institute)

Co-author: SIDDHARTA COLLABORATION

Presenter: CARGNELLI, Michael (Austrian Academy of Sciences - Stefan Meyer Institute)

Session Classification: Hadron Structure, Spectroscopy, and Dynamics II