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Kaonic 3He and 4He X-ray measurements in SIDDHARTA

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An energy shift of the 2p level of kaonic 3He and 4He atoms is recently studied in theory and experiment. A theory predicting deeply bound kaonic nuclear states estimates a significant energy shift in kaonic 3He or 4He. The SIDDHARTA experiment measured the kaonic 3He and 4He 3d-2p X-ray transitions at the DAFNE e+e- collider. The strong interaction shifts of the kaonic 3He and 4He 2p state were determined precisely. The world's first observation of kaonic 3He was performed. In addition, a possible isotope effect between 3He and 4He was obtained. In this talk, the results of kaonic 3He and 4He X-ray measurements in the SIDDHARTA experiment will be presented, as well as future plans.

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