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Unraveling the atomic structure of quantum materials using radioactive ions

Wednesday 5 December 2018 14:00 (30 minutes)

ISOLDE has been a hub for the development of radioactive probe techniques and their application in solid state physics and other fields. In this talk, we review some recent highlights from the application of electron emission channeling and perturbed angular correlation spectroscopy to research on functional quantum materials: from well-established research activities on doping of semiconductors, to emerging topics such as single-photon emitters for quantum technologies. We will describe the role played by the techniques and experiments developed at ISOLDE in the broader research programs to which they contribute, including the complementarity to other techniques available at large-scale facilities such as synchrotron light sources. As an outlook beyond the long shutdown 2, we will discuss opportunities for radioactive probe techniques in these emerging fields.

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