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Investigations of strongly correlated heavy-fermion materials with μSR

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Heavy fermion compounds are strongly correlated systems with partially filled 4f or 5f electron bands. The ground states of heavy fermion materials are determined by a competition between the on-site Kondo interaction that screens the local 4f or 5f magnetic moments and the inter-site Ruderman-Kittel-Kasuya-Yosida exchange interaction. Muon spin rotation and relaxation (μSR) techniques have been used for decades to investigate these ground states. In recent years we have applied μSR to the study of two heavy-fermion compounds of special interest, namely, the candidate topological Kondo insulator SmB6 and the rare spin-triplet superconductor UTe2. In this talk I will describe some of our experiments on these compounds and forthcoming μSR capabilities at TRIUMF.

Keyword-1

Heavy fermion compounds

Keyword-2

Muon spin rotation/relaxation

Keyword-3

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