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Ultra-High Magnetic Field Study of Actinide Elements[1]
CHARLES MIELKE, ROSS MCDONALD, Los Alamos National Laboratory, National High Magnetic Field Laboratory — The magnetic susceptibility and electrical conductivity of elemental plutonium and uranium are predicted to reveal the highly correlated nature of the elements upon application of very intense magnetic fields. A specialized Ultra-High Field generation system has been built and commissioned to study the effects of applied magnetic fields to actinide specimens. Magnetic fields to 150 tesla are routine with maximum field intensity extending to well above 200 tesla. The single turn system is designed to generate fields above 100 tesla while not damaging or dispersing the sample under study. First experimental results will be discussed as well as brief review of the system and techniques.

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