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Thermal properties of UO₂ single crystal K. GOFRYK, S. DU, A.D. ANDERSSON, C.R. STANEK, R. SCHULZE, D. SAFARIK, B. MIHAILA, J.C. LASHLEY, J.L. SMITH, Los Alamos National Laboratory — For decades UO₂ has been the most widely studied actinide oxide because of its technological importance as fuel material for nuclear reactors. Therefore there is a large interest in understanding its thermal, transport and thermodynamic properties. We present recent experimental results for the thermal conductivity and thermal expansion of high quality UO₂ single crystal, obtained for different crystallographic directions, and compare with results of molecular dynamics simulations. We will discuss the implications of this study.

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