

Abstract Submitted  
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**Anomalous Properties of Single Crystal Niobium**<sup>1</sup> RICHARD K. BOLLINGER, BEN D. WHITE, JOHN J. NEUMEIER, Montana State University, YOKO SUZUKI, JON BETTS, ALBERT MIGLIORI, National High Magnetic Field Laboratory - Los Alamos National Laboratory, HUGO R. Z. SANDIM, CARLOS DOS SANTOS, Escola de Engenharia de Lorena - USP — A number of anomalous properties have been observed in niobium over the years. The most striking, perhaps, is the anisotropic upper critical field,  $H_{c2}$ , in the superconducting state. Nb has also been observed to exhibit a “peak effect,” a peak in the critical current near  $T_c$ . Experimental evidence will be presented that identifies the source of some of these anomalies as due to interstitial hydrogen at concentrations of a few percent. Thermal expansion, specific heat, resistivity versus temperature, and other data will be presented.

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