Abstract Submitted
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Zeeman Effect in TiO_2:Cr^{3+} MICHAEL CRAWFORD, DuPont Company, XING WEI, STAN TOZER, National High Magnetic Field Laboratory — We will describe the results of Zeeman effect measurements for single crystals of rutile TiO_2 doped with Cr^{3+}. These measurements, performed at the National High Magnetic Field Laboratory in magnetic fields with strengths up to 45 T, utilized the near-infrared luminescence of Cr^{3+} at a temperature of T = 1.4 K. The Cr^{3+} luminescence spectra show the evolution with field strength of the splitting of the Cr^{3+} zero-phonon line at 12,684 cm^{-1} in magnetic fields applied parallel or perpendicular to the crystallographic *c*-axis. In the former case the zero-phonon line splits into four Zeeman components, while for the latter case three components appear. These results will be discussed and compared to earlier measurements made in weaker magnetic fields.

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