

Abstract Submitted  
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**Antiferromagnetic Resonance in Multiferroic YMnO<sub>3</sub> and LuMnO<sub>3</sub>**<sup>1</sup> SERGEI ZVYAGIN, Dresden High Magnetic Field Laboratory — Multiferroic rare-earth manganites have attracted much attention because of the coexistence of ferroelectric and magnetic orders. Combining conventional far-infrared Fourier-transform and THz-range free electron laser electron spin resonance (ESR) spectroscopy techniques, magnetic excitations in hexagonal multiferroic YMnO<sub>3</sub> and LuMnO<sub>3</sub> in the antiferromagnetically (AFM) ordered phase have been studied. The gap in the excitation spectrum ( $\sim 42$  and  $\sim 48$  cm<sup>-1</sup> for YMnO<sub>3</sub> and LuMnO<sub>3</sub>, respectively) was observed directly. Similar slope of the frequency-field dependences of AFM resonance modes,  $\sim 0.5$  cm<sup>-1</sup>/T, was revealed for both compounds. A fine structure of AFM resonance absorption has been revealed by means of high-resolution ESR techniques, which can be explained taking into account a finite interaction between the neighboring Mn<sup>3+</sup> layers. The work was done in collaboration with M. Ozerov, D. Kamensky, E. Čížmár, J. Wosnitza, A.K. Kolezhuk, D. Smirnov, H.D. Zhou, and C.R. Wiebe.

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Sergei Zvyagin  
Dresden High Magnetic Field Laboratory

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