

Abstract Submitted
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Low-lying magnetic excitations in the distorted triangular lattice antiferromagnet α -CaCr₂O₄ MICHAEL SCHMIDT, ZHE WANG, Experimental Physics V, Center for Electronic Correlations and Magnetism, Institute of Physics, University of Augsburg, D-86135 Augsburg, Germany, S. TOOTH, B. LAKE, A.T.M.N. ISLAM, Helmholtz-Zentrum Berlin fuer Materialien und Energie, D- 14109 Berlin, Germany, A. LOIDL, J. DEISENHOFER, Experimental Physics V, Center for Electronic Correlations and Magnetism, Institute of Physics, University of Augsburg, D-86135 Augsburg, Germany — We will discuss our results on α -CaCr₂O₄ obtained by FIR and Terahertz spectroscopy. This compound orders below $T_N = 42.6$ K in a proper screw 120° magnetic order, but shows additional low-lying magnetic modes indicative for the vicinity of a more complex magnetic order [1-2]. Our spectra obtained by FTIR and THz-TD spectroscopy show several optical magnons appearing below the magnetic ordering with anomalous temperature dependence. We will discuss their polarization dependence and a possible magnetoelastic coupling of these modes.

- [1] S. Toth et al., Phys. Rev. B 84, 054452 (2011)
- [2] S. Toth et al., PRL 109, 127203 (2012)

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