Abstract Submitted
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$EuTiO_3$: a possible multiferroic material, structural, magnetic and dynamical characterization ZURAB GUGUCHIA, HUGO KELLER, Physik-Institut der Universität Zürich, JUERGEN KOEHLER, ANNETTE BUSSMANN-HOLDER, Max-Planck-Institute for Solid State Research, STUTTGART COLLABORATION, ZUERICH COLLABORATION — Structural analogies between $SrTiO_3$ and $EuTiO_3$ suggest that other similarities exist, namely an oxygen octahedral rotational instability. This has been tested experimentally as well as theoretically by specific heat measurements [1], X-ray powder diffraction [2], EPR and μSR experiments [3], within the polarizability model and by ab initio calculations [4,5]. Earlier evidence for strong spin phonon coupling in $EuTiO_3$ [6] has been further explored for the high temperature instability at T_S and is reflected in the magnetic field dependence of T_S [7].

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