

Abstract Submitted  
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**Observation of a c-axis collapse in superconducting FeTeO<sub>x</sub> films below T<sub>c</sub>**<sup>1</sup> LAHIRU NARANGAMMANA, University of Connecticut, Storrs, XUERONG LIU, Brookhaven National Laboratory, Upton, NY, YUEFENG NIE, Cornell University, Ithaca, NY, JOSEPH BUDNICK, University of Connecticut, Storrs, CT, CHRISTOF NIEDERMAYER, Paul Scherrer Institut Villigen, PSI, Switzerland, JOHN HILL, GENDA GU, Brookhaven National Laboratory, Upton, NY, BARRETT WELLS, University of Connecticut, Storrs, CT — We compared the temperature dependent crystal structure of superconducting FeTeO<sub>x</sub> films and non superconducting Fe<sub>1.02</sub>Te single crystals. The primary difference between the two is that the superconducting FeTeO<sub>x</sub> films show a collapse of the c-axis below the superconducting transition temperature 13K. No such transition occurs in the single crystal. The room temperature structures of the two are similar and both show a tetragonal to monoclinic transition near 60K. Preliminary neutron diffraction studies indicate a suppression in antiferromagnetic order below T<sub>c</sub> on superconducting FeTeO<sub>x</sub> thin films.

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