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**Measuring the Thermal Hall Effect with Oxygen-18 Annealed Strontium Titanate Capacitive Thermometry** COLIN TINSMAN, ZIJI XIANG, GANG LI, FAN YU, TOMOYA ASABA, BENJAMIN LAWSON, LU CHEN, LU LI, Univ of Michigan - Ann Arbor — The thermal Hall effect shows promise as a method for characterizing materials with novel physics. However, measurements of the thermal Hall effect are challenging to make since widely used methods of thermometry display magnetic field dependence at low temperature. In order to make accurate measurements of temperature in high magnetic fields, we have developed thermometers using strontium titanate (STO), which has an increasing dielectric constant at low temperature to a tendency towards ferroelectricity. Although ferroelectric order is destroyed in STO at low temperature by quantum fluctuations, the introduction of oxygen-18 into the material by high temperature annealing has been shown to induce a ferroelectric transition at finite temperature. This allows us to tune the low-temperature behavior of the dielectric constant to create a thermometer with little magnetic field dependence below 1.5 K. We also show our preliminary work on making thermal Hall measurements using these thermometers.

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