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**Universal properties of disordered electron nematics from surface probes** BENJAMIN PHILLABAUM, ERICA CARLSON, Purdue University, KARIN DAHMEN — When the electronic degrees of freedom break the rotational symmetry of the host crystal, i.e. from  $C_4$  to  $C_2$ , the resulting state is an electronic Ising nematic. However the combination of reduced dimensionality and material disorder can forbid the formation of a long- range-ordered electron nematic, especially in strongly layered materials. Nevertheless, large domains are still possible. In this talk we will present results from a new kind of analysis for Scanning Tunneling Microscopy (STM) experiments as well as other surface probes. We map the locally broken  $C_4$  to  $C_2$  rotational symmetry of the electronic degrees of freedom to an Ising-type order parameter, use the local order parameter configuration to shed light on the universality class controlling the local pattern formation in cuprate superconductors.

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