

Abstract Submitted
for the MAR08 Meeting of
The American Physical Society

Spontaneous Transverse Voltage and Amplified Switching in Superconductors with Honeycomb Pinning Arrays CYNTHIA OLSON REICHHARDT, CHARLES REICHHARDT, Theoretical Division, Los Alamos National Laboratory — Using numerical simulations, we show that a novel spontaneous transverse voltage can appear when a longitudinal drive is applied to type-II superconductors with honeycomb pinning arrays in a magnetic field near certain filling fractions. We find a coherent strongly amplified transverse switching effect when an additional transverse ac current is applied, even for very small ac current amplitudes. The transverse ac drive can also be used to control switching in the longitudinal voltage response. We discuss how these effects could be used to create new types of devices such as current effect transistors.

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Date submitted: 20 Nov 2007

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