

Abstract Submitted
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Two Dimensional Wireless Josephson Junction Arrays: A Microwave Transmission Investigation LAURA ADAMS, Harvard University — We investigate the flow of Cooper pairs and unpaired electrons through an unbiased ordered 2D lattice of superconductor-insulator-superconductor tunnel junctions in the presence of an AC microwave field. The transmission reveals a robust resonance at temperatures below the transition temperature, T_c , and at low microwave power. As power is increased at fixed temperature, below T_c , resonant peaks split into two. In aggregate, these split peaks show well defined frequency steps for a range of temperatures. We review this data from various viewpoints, including the Berezinskii-Kosterlitz-Thouless phase transition, Shapiro steps, and as an 'artificial' supersolid. We gratefully acknowledge Professors Steven Anlage and Allen Goldmans support.

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