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Spin Transition of Composite Fermion Solids in Wide Quantum Wells Observed with Microwave Spectroscopy ANTHONY HATKE, LLOYD ENGEL, National High Magnetic Field Laboratory, YANG LIU, MANSOUR SHAYEGAN, LOREN PFEIFFER, KEN WEST, KIRK BALDWIN, Princeton University — Within a narrow range of Landau filling (ν) near 1, a resonance in the microwave spectrum in high mobility two-dimensional electron systems is known to occur [1]. The resonance is understood as due to a pinning mode of a Wigner solid of quasicarriers and is present in the ν-region of vanishing diagonal resistance. In microwave spectroscopy an abrupt jump in the resonance frequency, f_{pk}, upon decreasing ν from 1 was observed in wide quantum wells [2]. This jump was interpreted as a transition between two solid states: S1, which occurred closer to $\nu = 1$, and S2 (with enhanced-f_{pk}), which occurred farther from $\nu = 1$. In this talk we discuss microwave measurements using variable carrier density and in plane magnetic field. Typical for a spin-related transition, tilting the sample at fixed n results in effects similar to those found on increasing n without tilt. Taken together, the dependencies of the resonance on n and the tilt angle are consistent with a ground state spin transition between different solids. We discuss our results in terms of interacting two-flux composite fermions. [1] Chen et al., Phys. Rev. Lett. 93, 206805 (2004). [2] Hatke et al., Nat. Commun. 5, 4154 (2014).

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