

Abstract Submitted  
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**Pinning mode of 2D electron system with short-range alloy disorder** B.H. MOON, B.A. MAGILL, L.W. ENGEL, NHMFL/FSU, D.C. TSUI, L.N. PFEIFFER, K.W. WEST, Princeton University — At the low Landau filling ( $\nu$ ) termination of the fractional quantum Hall effect (FQHE) series, a two-dimensional electron system (2DES) becomes an insulator, which is identified in sufficiently low-disorder samples as a form of pinned Wigner solid. The microwave conductivity spectrum of such a solid shows a striking resonance, which is understood as a pinning mode, in which pieces of solid oscillate within the disorder potential. We report on the observation of the pinning mode of a 2DES that resides within  $\text{Al}_x\text{Ga}_{1-x}\text{As}$  with  $x=0.85\%$ . For a carrier density of  $n= 8.7 \times 10^{10} / \text{cm}^2$ , a resonance with a peak frequency ( $f_{pk}$ ) of about 5 GHz appears as  $\nu$  goes below the 2/3 FQHE. A local minimum in resonance amplitude vs.  $\nu$  occurs around  $\nu = 1/2$ . We will discuss the contribution of the alloy disorder to  $f_{pk}$ .

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