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Zero Bias Tunneling Resonance at Filling Factor $\nu_T = 1$ in GaAs Hole Bilayers SHASHANK MISRA, NATHANIEL C. BISHOP, Princeton University, EMANUEL TUTUC, IBM/ T.J. Watson Research Center, MANSOUR SHAYEGAN, Princeton University — Previous tunneling and transport measurements on bilayer two dimensional carrier systems at total filling factor $\nu_T = 1$ provide strong evidence for an excitonic ground state with small but finite dissipation. We present, for the first time, tunneling conductance measurements of bilayer two dimensional *hole* systems in a strongly interacting regime ($1.1 < d/l_B < 1.3$, where d is the interlayer distance and l_B is the magnetic length). We find that the zero bias tunneling resonance at $d/l_B = 1.2$ has a larger amplitude and a weaker temperature dependence than existing data from electron samples ($d/l_B = 1.5 - 1.8$) for the range of temperatures where we have taken data ($300mK - 600mK$). This work was supported by the DOE and NSF.

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