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Characterization and modelling of one-dimensional states in a bent quantum Hall system L. STEINKE, D. SCHUH, M. BICHLER, G. ABSTREITER, M. GRAYSON, Walter Schottky Institut, TU Muenchen, Germany, GRAYSON TEAM — We study the transport properties of a one-dimensional (1D) wire state at the corner of a 90° bent quantum Hall (QH) system. Such a system is formed in a corner-overgrown bent quantum well [1] by applying a tilted magnetic field B. The corner geometry itself serves as a sharp QH boundary and hosts strongly coupled 1D forward and reverse movers with no barrier in between. At different magnetic fields we measure a different conductance behavior of the 1D wire, depending on the QH filling factor ν. In the integer QH regime, at equal filling factors $\nu = 1$ and $\nu = 2$ on both facets of the bent 2D system, we observe an insulating phase where the wire conductance decreases rapidly with decreasing temperature T and DC bias Voltage V_{DC}. The integer filling factors $\nu > 2$ show a critical behavior with only weak dependence on T and V_{DC}. Spin-unresolved Hartree calculations of the dispersions of the corner states illustrate possible origins of the two observed phases [2]. The calculations also provide an insight into the electronic states in the bent QH system, which has no analogue in a planar structure. [1] M. Grayson, D. Schuh, M. Huber, M. Bichler, and G. Abstreiter, APL 86,); [2] M. Grayson, L. Steinke, D. Schuh, M. Bichler, L. Hoeppel, J. Smet, K. v. Klitzing, D. K. Maude, and G. Abstreiter, submitted;

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