Abstract Submitted
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Lateral probing of the LaAlO3/SrTiO3 two-dimensional electron liquid[1] M.P. STEHNO, A.E.M. SMINK, H. HILGENKAMP, A. BRINKMAN, MESA+ Institute for Nanotechnology, University of Twente, The Netherlands — The 2-dimensional electron liquid (2DEL) at the interface between the insulating oxides lanthanum aluminate and strontium titanate (LAO/STO) has a complex band structure and hosts novel electronic phases with magnetism and superconductivity. Electrical characterization of the 2DEL has focused mainly on magnetotransport in films or confined geometries, and on z-axis tunneling. We contacted the LAO/STO interface laterally and obtained a gate-tunable barrier between the 2DEL and the metallic electrode. Features in the differential conductance spectra are spaced by energies similar to the confinement energy at the oxide interface and may thus yield information on the (sub-) band structure of 2DEL and barrier region.

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