

Abstract Submitted
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Crossover from single electron counting to Cooper pair counting TIM DUTY, JONAS BYLANDER, PER DELSING, Microtechnology and Nanoscience, Chalmers University of Technology, Sweden — We present experimental studies of charge transport in a one-dimensional array of Josephson junctions using a single charge counting device based upon a radio-frequency single-electron transistor¹. We observe a crossover from time-correlated tunneling of single electrons to Cooper pairs as a function of an applied magnetic field. At relatively high magnetic field, single electron transport dominates and the frequency is given by $f=I/e$. As the magnetic field is lowered the frequency gradually shifts to $f=I/2e$, indicating tunneling of Cooper pairs. ¹Jonas Bylander, Tim Duty and Per Delsing, Nature 434 (2005) 285.

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