

## **Improved quasiparticle thermalization for single-electron turnstiles**

Joonas T. Peltonen

To advance towards metrologically useful current quantization accuracy in a turnstile based on a single-electron transistor with superconducting aluminium electrodes and a normal metallic island, low density of both residual and drive-induced quasiparticles in the superconducting leads is required. I present results from recent measurements where the quasiparticle density at the turnstile junctions is actively lowered by an on-chip, tunnel junction-based electronic refrigerator. I further discuss experiments where the thickness of the Al electrodes has been increased by an order of magnitude compared to the maximum allowed by the standard fabrication process.