

Abstract Submitted
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Closing the Quantum Metrological Triangle M. PAALANEN, Helsinki Univ Technol, Low Temp Lab, Espoo, Finland, A. KEMPPINEN, A. MANNINEN, A. SATRAPINSKI, MIKES, Espoo, Finland, J. HASSEL, P. HELISTO, A.O. NISKANEN, HEIKKI SEPPA, VTT Informat Technol, Espoo, Finland, P. HAKONEN, MIKKO MOTTONEN, JUKKA PEKOLA, JUHA VARTAINEN, Helsinki Univ Technol, Low Temp Lab, Espoo, Finland — Quantum Metrological Triangle is made out of Josephson voltage standard, Quantum Hall resistance standard and an accurate current pump. Closing the Triangle consists of applying Ohm's law with great accuracy on the three devices, based on fundamental physical phenomena and quantities, such as Planck's constant and electron charge. The first two devices are already accepted international metrological standards. Recently we have made progress in developing the missing components for the closing experiments, i.e. a differential low-noise amplifier for comparing small currents and a current pump. Both of these new devices are based on superconducting single electronics. We will describe our plans for closing the Triangle along with the expected uncertainties and also report on the progress in developing the low noise current amplifier and the current pump.

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