

Operation and Accuracy of an Automated Cryocooler-based 10 Volt Josephson Voltage Standard System

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Abstract - A commercially available complete microprocessor controlled, fully automated 10 Volt Josephson voltage standard system operated with a cryocooler was developed in cooperation between IPHT and Supracon. The system operates with an array of altogether 19,700 SIS Josephson tunnel junctions. A direct comparison to a helium-based system showed an agreement of 1.3 nV at a relative uncertainty of 2×10^{-10} .

Keywords - Josephson voltage standard, cryocooler, voltage standard comparison

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