

UNCERTAINTY ANALYSIS OF JOSEPHSON VOLTAGE STANDARD SYSTEM

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High precision voltage calibrations are now regularly performed in industrial calibration laboratories with Josephson array voltage standard systems. A fully uncertainty characterization cannot guarantee that the lowest possible uncertainty has been achieved, although uncertainties of less than 10 parts in 10^9 have been quoted. Comparing systems by reference standard interchange can give greater assurance of low uncertainty capabilities, but additional uncertainty components must also be considered. With a realistic uncertainty statement as a desired goal, uncertainty characterizations of the NIST voltage standard systems along with analysis of Zener reference interchange data will be discussed.