

Abstract Submitted
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Status report on the measurement of the Planck constant using the NIST-3 watt balance STEPHAN SCHLAMMINGER, DARINE HADDAD, RUIMIN LIU, DAVID NEWELL, JON PRATT, National Institute of Standards and Technology — The watt balance allows the comparison of virtual mechanical power to virtual electrical power with uncertainties of a few parts in 10^8 . Since electrical power can be determined as the product of known numerical values, two frequencies, and the Planck constant by the virtue of modern quantum metrology, the watt balance is a link between mechanical power and the Planck constant, h . The NIST-3 watt balance was used in a 2007 measurement to determine h with a relative uncertainty of 3.6×10^{-8} . We have recently started efforts for another high precision determination of h with this instrument. We present the status of the effort, discuss the largest contributions to the uncertainty budget, and share our plans for the future.

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