

Mass metrology

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Abstrak

This book presents the practical aspects of mass measurements. Concepts of gravitational, inertial and conventional mass and details of the variation of acceleration of gravity are described. The metric convention and international prototype kilogram and BIPM standards are described. The effect of change of gravity on the indication of electronic balances is derived with respect of latitude, altitude and earth topography. The classification of weights by OIML is discussed. Maximum permissible errors in different categories of weights prescribed by national and international organizations are presented. Starting with the necessity of redefining the unit kilogram in terms of physical constants, various methods of defining the kilogram in terms of physical constants are described. The detection of very small mass of the order of zeptogram through Nanotechnology is also discussed. Latest recommendations of CIPM are given.