

An Updated Approach for the Dissemination of the Mass Unit Using Automated Electro Magnetic Force Compensating Mass Comparators

Speaker/Author: David Dikken
MTL, LLC
10901 Nexbitt Ave. S
Minneapolis, MN 55437
(952) 888-0762 Fax(952) 881-2236
ddikken@mtlcorp.com

Abstract

A brief history of mass dissemination and the algorithms associated with current standard practices are discussed. An updated approach using similar linear algebra and regression analysis while not using a grouped weighing series approach is proposed thus allowing for: 1) real time buoyancy corrections, 2) applications of better sensitivity calculations for modern electromagnetic force compensating mass comparators, 3) adoption of routines which are fully benefited by automated weight handling comparators, and 4) an increased accuracy in the calculation of GUM compliant uncertainties thru out the dissemination process.