Contribution ID: **115** Type: **Oral presentation**

Using relative gravimeter to determine vertical gravity gradients at NIMT

Wednesday 20 May 2015 14:30 (15 minutes)

This work presents the method used to determine the vertical gravity gradients at National Institute of Metrology (Thailand), NIMT, using the relative gravimeter Scintrex Autograv CG-5. This value will be used to transfer the absolute gravity from the reference height of an instrument to a new specific position because the reference height of each absolute gravimeter is different depending on its construction that can be found between about 80 and 130 cm. Thus, in the comparison between absolute gravimeters, the measurement results must be corrected from the reference height of their gravimeters to the same reference level. That is why, it is necessary to determine the vertical gravity gradients as high accuracy as it is possible. In this work, three locations were selected to perform measurements that are two points at NIMT-Klong 5 (Pathumthani) and one point at NIMT-Rama 6 (Bangkok). The vertical gradient at each location was determined from linear fitting using the relative gravity values measured by CG-5 at five vertical levels above the ground benchmark. The results of gravity gradients found in this work range from 300.4 μGal m^{-1} to 320.4 μGal m^{-1} (1 μGal = 10^{-8} m s^{-2}) that the normal value of vertical gradient is 308.6 μGal m^{-1}.

Author: Dr PRIRUENROM, Tasanee (Pressure Laboratory, Mechanical Department, National Institute of Metrology (Thailand), Pathumthani, THAILAND 12120)

Co-author: Mrs WORADET, Nattanan (Pressure Laboratory, Mechanical Department, National Institute of Metrology (Thailand), Pathumthani, THAILAND 12120)

Presenter: Dr PRIRUENROM, Tasanee (Pressure Laboratory, Mechanical Department, National Institute of Metrology (Thailand), Pathumthani, THAILAND 12120)

Session Classification: Instrumentation, Metrology and Standards

Track Classification: Instrumentation, Metrology and Standards