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Type: Oral Presentation

Evaluation of satellites LAGEOS I and II; general relativistic accelerations in the Schwarzschild field of Earth

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Solutions of General Relativity Theory (GRT) pertaining to space geodesy are weak field, slow motion approximations. These approximations are valid as the gravitational field in which the solutions are performed has a potential of small magnitude and the velocities involved for any of the satellites are much smaller than the velocity of light. The basic effects of GRT on space geodetic measurements are related to how GRT affects the observables and dynamics of satellite orbits. We evaluate the GRT accelerations ascribed to the Schwarzschild field, as well as those due to Lense-Thirring precession (frame dragging) and de Sitter precession. The Shapiro delay for a laser pulse as applied to Satellite Laser Ranging (SLR) is calculated and the importance of including this GRT correction in the range corrections for SLR is described in terms of evaluation of the Observed-Computed residuals. Post-post Newtonian corrections are calculated and their relevance discussed in terms of accuracy improvements.

Level (Hons, MSc, PhD, other)?

other

Consider for a student award (Yes / No)?

no

**Would you like to
 submit a short paper
 for the Conference
 Proceedings (Yes / No)?**

yes

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