Poster Session #B
Observational and space tests of gravitation

B07

Weighing spacetime along the line of sight using precise astrometry

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I will present a new method of determining the mass density along the line of sight by comparing the results of two types of astrometric distance measures to a single luminous object: the angular diameter distance or luminosity distance with the parallax distance. The difference between them is a spacetime curvature effect and, for short distances, it can expressed as an integral of the matter density along the LOS. The derivation of the effect assumes the geometric optics approximation, but otherwise it is very general and valid in any spacetime.