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Experiments: The Astrometric Gravitational Arena: principles and applications

Thursday, September 7, 2023 2:00 PM (30 minutes)

This talk aims to present the potential of gravitational astrometry as a tool for peering into the fabric of spacetime exclusively using stellar astrometry. Once prescribed a suitable set of geometries and observers, a multiscale investigation consistent with general relativistic-compliant astrometry allows testing general relativistic scenarios for our Galaxy as well as tiny angular variations induced by passing gravitational waves. Results from the application of the recent Gaia data releases and dedicated simulations confirm the effectiveness of such an astrometric gravitational arena, in particular the role of gravitational dragging in determining the flatness of the galactic rotational curve and the implementation of the observation principle of the astrometric gravitational wave antenna in space, on ground and in connection with PTA. The presentation also intends to be an update of the plenary talk held at the last SIGRAV congress.

Presenter: CROSTA, Mariateresa

Session Classification: Parallel Sessions