Pilar Romero
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PROPOSED ROLE IN METNET

To study some geodetic aspects in the frame of the mission METNET that will be carried out from the analysis of the information of Solar Irradiance spectral sensor, trying to detect the eclipses produced by Phobos and Deimos. The study of the observed eclipses will be useful, firstly, to help in the characterization of the Martian atmosphere by analyzing its repercussion on the parameters of the measured radiation, and secondly, to solve the problem of the precise location of the probe landing place. Moreover, if continued observations of eclipses allow detecting variations of latitude, it will be possible to monitor the polar motion of Mars what will contribute to quantify the size of an inner core, using a model of rotation including the effects of this core.

Research interests:

- Studies associated to Mars.
- Geostationary Satellites Control
- Celestial Mechanics and Astrodynamics
- Relativity in Fundamental Astronomy and Space Geodesy

Member of the International Astronomical Union.
Division I. Fundamental Astronomy

EDUCATION

DEGREE in MATHEMATICS, Universidad Complutense Madrid, Spain 1978
Ph. D. in MATHEMATICS Universidad Complutense Madrid, Spain 1985

WORK EXPERIENCE OCCUPATION OR POSITION HELD:

1986 - current: Associate Professor
Department of Astronomy and Geodesy
Faculty of Mathematics Science Universidad Complutense Madrid, Spain

1978-1986 Assistant Professor
Department of Astronomy and Geodesy
Faculty of Mathematics Science Universidad Complutense Madrid, Spain

VISITING POSITIONS

Visiting Scientist
Observatoire Royal Belguique 1983, 1985
Technical University of Graz Austria 1986
Centro: Politécnico de Milano, Italy 1987, 1989

PUBLICATIONS

Author of 70 research papers
Main last publications:

P.Romero,. J. M. Gambi, E. Patiño
Station keeping manoeuvres for geostationary satellites using feed-back control techniques. Aerospace Science and Technology Vol. 11, n 2-3, pp.229-237 (2007)

P. Romero, J.M. Gambi, E. Patiño, R. Antolin,
Optimal Station-Keeping for Geostationary Satellites with Electric Propulsion Systems under Eclipse Constrains. Progress in Industrial Mathematics at ECMI 2006, SERIES: Mathematics in Industry, Springer-Verlag, Vol. 12, pp. 260-265 (2008)

P.Romero
Post-Newtonian Covariant Formulation for gravity determination by differential Chronometry. Gravity, Geoid and Earth Observation. Series: International Association of Geodesy, Springer-Verlag, Vol. 135, (2010)

P.Romero, G.Barderas
Chronogram of Phobos Eclipses on Mars for Position Determination of the MetNet Precursor Lander. Icarus (under review)