

## Miguel Herraiz

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### Proposed Role in Metnet

- Analyze Mars Ionosphere paying special attention to:
  - Electron density distribution non based on Chapman model
  - Ionosphere influence on magnetic measurements taken on the Mars surface
- Study the charged particles motion inside the Mars magnetic field near the surface

### Experience Related to the Investigation

Miguel Herraiz has worked on seismology and geomagnetism since early eighties. In the first field of research special attention has been paid to problems concerning radiative transfer theory and scattering phenomena applied to seismic coda waves. With respect to the geomagnetism the research has focused on the Ionosphere, with a particular emphasis on ionosphere models and electron density anomalies.

### Employment

- **1985-Present:** Professor at the Department of Geophysics and Meteorology. Lecturer on Geomagnetism.
- **2008-Present:** Head Department of Geophysics and Meteorology
- **2006:** (May-July) Visiting Scientist at the Aeronomy and Radiopropagation Laboratory, “Abdus Salam” International Centre for Theoretical Physics, Trieste, Italy.
- **1996:** (July-September) Visiting Professor at the Seismological Observatorio Sismológico de Suroccidente, Universidad del Valle, Cali, Colombia
- **1994:** (June-September) Visiting Professor at the Universidad Nacional de Ingeniería, Lima, Perú
- **1988:** (July-September) Visiting Scientist at the U.S. Geological Survey, Golden, Colorado, USA
- **1986:** (June-September) Visiting Scientist at the Seismographic Station, University of California, Berkeley, USA
- **1984:** (March-July) Visiting Scientist at the Massachusetts Institute of Technology, Cambridge, Massachusetts, USA
- **1982:** (May-June), Visiting Scientist at the Seismographic Station, University of California, Berkeley, USA

### Main Publications

- Bolt, B.A., **M. Herraiz**, 1983, “Simplified estimation of seismic moment from seismograms”, *Bull. Seism. Soc. Am.*, 73, 735-748.
- **Herraiz, M.**, J. Mezcua, 1984, “Application of coda wave analysis to microearthquake analog data”, *Annales Geophysicae*, 2, 5, 545-552.
- Mezcua, J., **M. Herraiz**, E. Buforn, 1984, “Study of the 6 June 1977 Lorca (Spain) earthquake and its aftershock sequence”, *Bull. Seism. Soc. Am.*, 74, 167-179.
- **Herraiz, M.**, A.F. Espinosa, 1986, “*Scattering and Attenuation of High-Frequency Seismic Waves: Development of the Theory of Coda Waves*”. Open-File Report, U.S. Geological Survey, 86-455, 92 pp
- **Herraiz, M.**, A. F. Espinosa, 1987, “Coda Waves; A Review”, *Pure and Applied Geophysics*, 125, 4, 499-577.
- Ibáñez, J., E. Del Pezzo, F. De Miguel, **M. Herraiz**, G. Alguacil, J. Morales, 1990, “Depth-dependent seismic attenuation in the Granada zone (Southern Spain)”, *Bull. Seism. Soc. Am.*, 80, 1232-1244.

- **Herraiz, M.**, G. de Vicente, R. Lindo, J.G. Sánchez Cabañero, 1996, “Seismotectonics of the Sierra Albarrana area (Southern Spain). Constraints for a regional model of the Sierra Morena- Guadalquivir Basin limit”, *Tectonophysics*, 226, 425-442.
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- **Herraiz, M.**, G.de Vicente, R. Lindo, J. Giner, J.L. Simón, J.M. González Casado, O. Vadillo, M.Rodríguez-Pascua, J.I. Cicuéndez, A. Casas, L. Cabañas, P. Rincón, A. Cortés, M. Ramírez, M. Lucini, 2000, “The recent (upper Miocene to Quaternary) and present tectonic stress distributions in the Iberian Peninsula”, *Tectonics*, 19, 4, 762-786.
- Marín, D., A.V. Mikhailov, B.A. De la Morena, **M. Herreraiz**, 2001, “Long-term hmF2 trends in the Eurasian longitudinal sector from the ground-based ionosonde observations”, *Ann. Geophysicae*, 19, 761-772.
- Miró, G. B.A. de la Morena, S.M. Radicella, **M. Herreraiz**, 2002, “Worst cases for a one-hop high frequency link”, *Annals of Geophysics*, 45, 201-205.
- Mikhailov, A.V., D. Marín, T.Yu. Leschinkaya, **M. Herreraiz**, 2002, “A revised approach to the foF2 long-term trends analysis”, *Ann. Geophysicae*, 20, 1663-1675. (10/5)
- Farelo, A., **M. Herreraiz**, A.V. Mikhailov, 2002, “Global morphology of night-time NmF2 enhancements”, *Ann. Geophysicae*, 20, 1795-1806. (1/1)
- Cueto, M., D. McKnight, **M. Herreraiz**, 2003, “Daily geomagnetic variations on the Iberian Peninsula”, *Geophysical J. Int.*, 152, 113-123. (2/2)
- Mohíno, E. **M. Herreraiz**, E. Kazimirovsky, 2003, “Application of wavelet analysis to quasi-two day oscillation occurrence in the time variations of foF2”, *Int. J. Geom. Aeronomy*, 4, 3, 1-6.
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- García, D., S.K. Singh, **M. Herreraiz**, J. Pacheco, M. Ordaz, 2004, “Inslab earthquakes of central México; Q, source spectra and stress drop”, *Bull. Seism. Soc. Am.*, 94, 789-802. (4/2)
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