
Magnetic connectivity through the Solar Partially Ionized Atmosphere

Researchers:

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Language Undefined

Objectives:

- Exploración de una descripción novedosa del plasma de la atmósfera solar que incluye una aproximación multi-fluido.

Methodology:

El bajo nivel de ionización en la fotosfera y cromosfera del sol conlleva diferencias sobre el tratamiento clásico magneto-hidrodinámico de su atmósfera. El código desarrollado en este proyecto permite hacer simulaciones de las regiones sub-fotosférica y fotosférica del sol, hasta la cromosfera baja, con un realismo no conseguido en el pasado.

Journals and conferences:

- "Rayleigh-Taylor instability in prominences from numerical simulations including partial ionization effects", Khomenko, E.; Díaz, A.; de Vicente, A.; Collados, M.; Luna, M., *Astronomy & Astrophysics*, Volume 565, id.A45, 15 pp.
- "Rayleigh-Taylor instability in partially ionized prominence plasma", Khomenko, E.; Díaz, A.; de Vicente, A.; Collados, M.; Luna, M., *Nature of Prominences and their role in Space Weather*. Edited by Brigitte Schmieder, Jean-Marie Malherbe and S.T Wu. *Proceedings of the International Astronomical Union, IAU Symposium*, Volume 300, pp. 90-93
- "Fluid description of multi-component solar partially ionized plasma", Khomenko, E.; Collados, M.; Díaz, A.; Vitas, N., *Physics of Plasmas*, accepted on 6/08/2014
- "Observations and Implications of Large-amplitude Longitudinal Oscillations in a Solar Filament", Luna, M.; Knizhnik, K.; Muglach, K.; Karpen, J.; Gilbert, H.; Kucera, T. A.; Uritsky, V., *The Astrophysical Journal*, Volume 785, Issue 1, article id. 79, 13 pp.
- "Rayleigh-Taylor instability in partially ionized compressible plasmas: One fluid approach", Díaz, A. J.; Khomenko, E.; Collados, M., *Astronomy & Astrophysics*, Volume 564, id.A97, 16 pp.
- "Prominence Mass Supply and the Cavity", Schmit, Donald J.; Gibson, S.; Luna, M.; Karpen, J.; Innes, D., *The Astrophysical Journal*, Volume 779, Issue 2, article id. 156, 7 pp.
- "Propagating Waves Transverse to the Magnetic Field in a Solar Prominence", Schmieder, B.; Kucera, T. A.; Knizhnik, K.; Luna, M.; Lopez-Ariste, A.; Toot, D., *The Astrophysical Journal*, Volume 777, Issue 2, article id. 108, 11 pp.
- "Properties of oscillatory motions in a facular region", Kostik, R.; Khomenko, E., *Astronomy & Astrophysics*, Volume 559, id.A107, 10 pp.
- "Dislocations in Magnetohydrodynamic Waves in a Stellar Atmosphere", López Ariste, A.; Collados, M.; Khomenko, E., *Physical Review Letters*, vol. 111, Issue 8, id. 081103
- "Properties of convective motions in facular regions", Kostik, R.; Khomenko, E., *Astronomy & Astrophysics*, Volume 545, id.A22, 9 pp.
- "Heating of the Magnetized Solar Chromosphere by Partial Ionization Effects", Khomenko, E.; Collados, M., *The Astrophysical Journal*, Volume 747, Issue 2, article id. 87, 11 pp.

Web:

- [Página web del proyecto](#) [2]

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