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Solar cycle dynamics of the quasi-biennial periodicities associated with the coupling of a double solar dynamo

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Abstract content

In this work we report an analysis of various indices of solar magnetic variability of closed and open field, concentrating particularly in the quasi-biennial periodicities (1.7-2.5 years). The wavelet technique is used in the time series of the solar indices to find the significant periodicities of our study, we also use other wavelet analysis already made. We consider the theory of a double solar dynamo, with its low frequency component located at the base of the convection zone, and its high frequency component in the upper part, coupled by the helicity (alpha effect). In this context, we obtain a classification of the couplings between the low and high frequency components per cycle along cycles 17 to 23, based on the strength and regularity of the quasi-biennial periodicities.

If this paper is presented for a collaboration, please specify the collaboration

Summary

Reference

Proceedings of the 30th International Cosmic Ray Conference; Rogelio Caballero, Juan Carlos D'Olivo, Gustavo Medina-Tanco, Lukas Nellen, Federico A. Sánchez, José F. Valdés-Galicia (eds.); Universidad Nacional Autónoma de México, Mexico City, Mexico, 2008; Vol. 1 (SH), pages 505-508

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