



Wavelet Analysis of an Oscillating Filament – A Study in Coronal Seismology

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Solar filaments are long dark features in the atmosphere of the Sun. A filament was observed on 15 October 2002 as a part of a highly dynamic polar crown prominence near the south pole of the Sun. It completed three cycles of oscillation. EUV images taken by the Extreme Ultraviolet Imaging Telescope (SOHO/EIT) are analysed. The spatial structure and the temporal variation of the filament oscillations are studied by using the techniques of wavelet analysis. The wavelet spectrum of the sixty two snapshots of the filament oscillation shows an oscillation period of around 2.5 hours, which slowly decreases with time all along the filament until the filament suddenly erupts.