



Proper Orthogonal Decomposition of Solar Photospheric Motions

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The spatio-temporal dynamics of the solar photosphere is studied by performing a Proper Orthogonal Decomposition (POD) of line of sight velocity fields computed from high resolution data coming from the MDI/SOHO instrument. Using this technique we are able to identify and characterize the different dynamical regimes acting in the system. Low-frequency oscillations, with frequencies in the range 20-130 μHz , dominate the most energetic POD modes, and are characterized by spatial patterns with typical scales of about 3 Mm. Pattern with larger scales of about 10 Mm, are associated to *p*-modes oscillations at frequencies of about 3000 μHz .