

Eigenspectra of Active Region Long-period Oscillations Obtained using the Image Processing Moment Method

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The long-period (≥ 2 hour) oscillations of the active regions (ARs) have been studied. The investigation is based on an analysis of time series built from SDO/HMI magnetograms, and represents the case study of several typically structured ARs. The time series of AR characteristic parameters have been measured and recorded by using the image moment calculation method. Three different method of spectral analysis were applied: analysis of fft spectra; analysis of rebinned fft spectra; and analysis of combination of fft of autocorrelation function and fitting of sine functions to the time series. The Gaussian apodization and zero padding were used to the data sets. The data processing and analysis showed that there are some sequences of periods that may give the spectra which can have a signature of standing oscillations.