

# **Mid-term periodicities in the solar magnetic flux**

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In this paper we report an analysis of the solar magnetic fluxes estimated in the period 1971-1998. We applied the wavelet technique to find the significant periodicities of these series. We concentrate particularly in the mid-term quasi-periodicities (1-2 years). The mid-term periodicity of 1.7yr is the dominant fluctuation for all the types of fluxes analyzed (total, closed, open, low and high latitude open fluxes) and has a strong tendency to appear during the descending phase of solar activity. The mid-term fluctuation of 1yr is significantly present in total and closed fluxes, but it is less important in open fluxes. It is recognizable in the high latitude open flux, but it is absent in the low latitude open flux. Due to the uncertainties involved in estimating the exact period of the quasi-annual peak, this component may not be different from the previously-reported 1.3yr periodicity. The high frequency fluctuations of all the fluxes but the high latitude open flux are in phase with the 11yr solar cycle. The high latitude flux fluctuations tend to be present all the time, showing that along the cycle both the low latitude bipolar active regions and the polar coronal holes regulate this flux. These findings rule out the possibility of a more basic periodicity different from the 11yr cycle.