Figure 6. Same as Fig. 5, but for activity parameters $\langle \epsilon_b(t) \rangle$ (left panel) and $\langle \epsilon_b \rangle_{\text{up}}$ (right panel). Grey region corresponds to years of maximum solar activity, as described in the text.

Figure 7. Box-counting dimension of magnetic forcing term $\tilde{f}_b(t)$ for different values of $j$. Curves are distinguished for years corresponding to maximum (black lines, years 1998 to 2005) or minimum (red lines, years 1996, 1997, 2006 to 2008) of the solar cycle.

Figure 8. Box-counting dimension of magnetic forcing term for $j = 500$ with respective activity of $\epsilon_b(t)$ (red lines): $N$ (left) and $\max(\epsilon_b)$ (right), with $n = 5$. Grey region corresponds to the maximum period of the solar cycle, as described in the text.

It is important to note that for small values of $j$, the fractal dimension is essentially constant. In fact, for $j = 1$ the fractal dimension is always one for all years, due to the scatter diagram being exactly a line (see figure 2). Unlike Fig. 7, Fig. 10 does not suggest a robust correlation between the fractal dimension of $\epsilon_b(t)$ and the solar cycle, for any value of $j$.

Therefore, the time-dependent fractal dimension that characterized the forcing here adopted, leads to noticeable variations in the intermittency of the magnetic energy dissipation rate, as measured by the activity parameters above defined.