

Dear Author,

Your paper takes now into account most questions and comments from the Referee 2 reports and introduces some new insights on multifractal intermittency and the multifractal analysis performed. In particular, Fig.12 was improved and it is also helpful to have now an explicit expression for the 2-parameter parabolic approximation of the codimension function  $C(h)$  (line 393). This helps to better understand Referee 2's theoretical argument that, to ensure the conservation of the flux of energy, one should use only a 1-parameter approximation.

I am therefore glad to inform you that your paper is accepted up to "technical corrections". I issue only a few suggestions below and recommend a careful reading, In particular the formulation of some inserts could be improved.

### Some suggestions

It would be useful to point out, as illustrated by Fig.12b, that the scale parameter  $b$  is much more difficult to estimate ( $b \approx 0.03$ ) than the location parameter  $h_{mp}$  ( $\approx 0.35$ ), the singularity of maximum probability ( $C(h_{mp}) = 0$ ). Moreover, satisfying that the third-order structure function scales like the scale ( $\zeta(3) = 1$ , see your online equation at line 395) requires a quite different  $b$  value:  $b = 1/90 \approx 0.011$ . This discrepancy is also illustrated by the fact that the (non-zero) order  $q_1$  satisfying the scale independence of the energy flux density statistical moment ( $\tau(q_1) = 0$  in eq.4) has the value  $q_1 \approx 0.37$  instead of 1. One may note that the estimate  $q_1 \approx 0.18$  earlier given by Referee 2 seems to have been obtained with a higher estimate of  $b$ , while the new Fig.12b can provide more precise estimate.

The aforementioned online equation is in agreement with Referee 2's argument on a unique independent parameter to ensure the conservation of the energy flux, but such a fit seems to be poor and therefore brings into question the parabolic approximation. Therefore, I would suggest more clearly stating that future work is needed to fully clarify this question, rather than the current double negative "the intermittency we measure is not in contradiction..." (line 397). Note also that the sentence that follows is a bit confusing because it suddenly addresses the flux itself, no longer its average.

Please, check the sign of the Kolmogorov 4/3 law (line 349).

Best regards,

Daniel Schertzer (editor)