

## ***Interactive comment on “On the mechanical behaviour of a low angle normal fault: the Altotiberina fault (Northern Apennines, Italy) system case study” by Luigi Vadacca et al.***

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We appreciate the comments of the referee Rick Bennett on our study. They will help to improve our manuscript. We have written each reply just below to each comment.

1 - The authors use the word “interested” in a way that I am unfamiliar with. Perhaps they meant “intersected”?

P1, L11: We will change "interested" by "characterized"

P6, L7: We will also change "interesting" with "characterizing"

2 - A table describing the models and reporting the WRMS values for each might help

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the reader to evaluate the differences among the models and their fit to the data.

We attach Table II (as supplement to this comment) reporting the WRMS calculations as suggested.

3 - A statistical assessment of the significance of differences in WRMS values among the various models would greatly strengthen the conclusions.

The relative uncertainty of root mean square error could be estimated as  $(1/2A)^{1/2}$  with  $A = \sum(1/gperror^2)$  under the assumption that the mean square error is (approximately) distributed as a  $\chi^2$  random variable. (Faber, 1999). In our case, the relative uncertainty is 5% that, for example, leads to a conservative absolute estimation for our minimum wrms of 0.01. In the paper, we report the uncertainty estimation to the wrms where needed. We highlight that we could consider wrms values of 0.19 and 0.24 as statistically different (95% confidence).

Nicolaas (Klaas) M. Faber, Estimating the uncertainty in estimates of root mean square error of prediction: application to determining the size of an adequate test set in multivariate calibration, *Chemometrics and Intelligent Laboratory Systems*, Volume 49, Issue 1, 6 September 1999, Pages 79-89, ISSN 0169-7439, [http://dx.doi.org/10.1016/S0169-7439\(99\)00027-1](http://dx.doi.org/10.1016/S0169-7439(99)00027-1).

Please also note the supplement to this comment:

<http://www.solid-earth-discuss.net/se-2016-48/se-2016-48-AC2-supplement.pdf>

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Interactive comment on Solid Earth Discuss., doi:10.5194/se-2016-48, 2016.

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