

## ***Interactive comment on “Did Adria rotate relative to Africa?” by D. J. J. van Hinsbergen et al.***

### **Anonymous Referee #1**

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#### General comments

In this paper, Authors attempt to reconstruct relative motion between Adria and Africa using paleomagnetic data. They provide new paleomagnetic data from the Apulia platform, in Southern Italy, and compare them with other data available from Adria in order to constraint the relative rotation between Adria and Africa.

The overall quality of the paper is good. Authors make a review of the existing paleomagnetic data from the Adria Plate and add new information, contributing to increase the paleomagnetic database available for the area. Moreover, both the scientific approach and the applied methods are valid, even if some references are missing.

By comparing all the paleomagnetic poles available for Adria, Authors obtain a post-Eocene  $9.5 \pm 8.7$  CCW. As the error envelope is equal to the rotation value itself, these data cannot help in solving what Authors define 'the Adriatic enigma'. This means

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that Adria could not rotate relative to Africa or could rotate  $18^\circ$ , depending on the kinematic model Authors consider. Probably, more data are still needed to use these paleomagnetic data as a robust tool to constraint kinematic models.

Rather than reaching substantial conclusions, Authors arise some open problems that future research has to solve, such as the estimation of Neogene shortening in Western Alps, the estimation of Neogene extension in the Ionian Basin, or the role of strike-slip tectonic features in the decoupling of northern and southern Adria. Results from this study do not provide new constraints for the reconstruction of the central Mediterranean kinematic history.

#### Specific comments

- In a previous manuscript by Marilyn Mensink (A paleomagnetic study of the Apulian platform: did Adria rotate relative to Africa?) number of sites were 12 and cores 575. Why did you discard 3 localities in this work?
- the updated paleomagnetic data base (Table 1) show 15 poles and not 12 as reported in the text (p. 955, line 17)
- it is not clear why the  $9.5 \pm 8.7$  CCW should have occurred after  $20 \pm 10$  Ma

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Interactive comment on Solid Earth Discuss., 6, 937, 2014.

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