

## ***Interactive comment on “Palaeomagnetic investigations of sediments cores from Axios zone (N. Greece): implications of low inclinations in the Aegean” by E. Aidona et al.***

**E. Aidona et al.**

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We would like to thank both reviewers for their comments and valuable suggestions, which helped us to improve this paper. Our answers and the corresponding manuscript modifications in response to the suggestions of both reviewers are presented in detail in the following.

### **REV.1 (B.HENRY)**

1. First remark, origin of magnetization.

The remagnetization concerns only the samples from Epanomi, which are dolomitised and rejected from further analysis. The samples which have been taken into account

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for this study show both polarities but have been converted through the origin for presentation purposes. From the obtained 245 results 127 of them are of reversed polarity.

2. It is correct that boreholes are rarely vertical. Unfortunately, such information is totally missing from the majority of the boreholes here, except for Kass3, Kass4 as it is referred in the text (page 40).

Our samples have been cut with amagnetic drills within the “heart” of the cuttings (see figure below), thus minimizing the effect of the parasitic magnetization of the initial drilling.

See Fig. 1.

3. The AMS measurements were performed with a KLY3 and used for the determination of the bedding plane, not for assessing the AMS effect.

4. The quality of figures has been improved.

The high coercivity component is indeed the one which cannot be isolated after demagnetization at 60mT.

5. Concerning the viscous component, the calculation of  $a_{95}$  for each sample is meaningless since only 2 or 3 steps of demagnetization are needed to isolate it. Fig.10b intends to document the improvement of the scattering in directions by reorienting a few samples. The only possible conclusion drawn from this procedure would be that the tendency of the reoriented directions is coeval with the overall dextral ones for the onshore formations.

6. We have made an erroneous presentation of the total results by introducing an  $a_{95}$  in table 2, which leads the reader to false conclusions, together with the column accepted/rejected. In fact, this table shows only the mean direction of characteristic components in order to provide an overview. Neither  $a_{95}$ , nor the last column (deleted) matter for the final classification of values which was done on the basis of age and where all trustworthy data were taken into account individually -not mean values.

## REVIEWER 2 (S. SPASSOV)

### General comments

#### Introduction

All your comments were taken into account. Concerning the comment about the aims of the paper the authors would like to state that the extended drilling of the area was performed by the Greek Petroleum Company some 20 years ago before our study started. The cores were made available to us for all possible investigations and the aim of the study was finalized after several pilot measurements and exploration of other information (geological, tectonic etc). Therefore it would be dishonest to state that we first fixed the aims, then investigate.

#### Geological setting and sampling

a) This paragraph gives at the beginning an overview of the geology of the area and then gives some info for the drills as they were given from the geologists who studied the boreholes from the Greek Petroleum Company.

b) For marine core 'Nireas' no geological information was provided to us by the G.P.C. because the specific core was considered as 'highly confidential' for political and economical reasons.

c) Indeed Fig.2 is simple enough. The problem is that detailed lithological description is given only for the intervals where the drill cores exist. So, for example, for a 2000m depth borehole it is impossible to draw the different stratigraphic layers of a few meters interval. However only the depths of the samples are added in the Fig.2

d) P.40. Tilt values were provided by the Greek Petroleum Company reports and were measured only for Kass3 and Kass4.

#### Discussion

a) P.44. The age of the samples was determined mostly by paleontological and paly-

nological methods.

b). P.47. We partly re-arranged the last paragraph of the discussion by putting together everything concerning the alternative pole of Westphal (1993). Though ref. 1 does not agree with the use of this pole, we consider the comparison as useful since it was also done by other authors (e.g. Van der Voo & Torsvik, 2001) and since ref 2 does not suggest omission.

Finally all detailed comments referred to the annotated text were taken into consideration.

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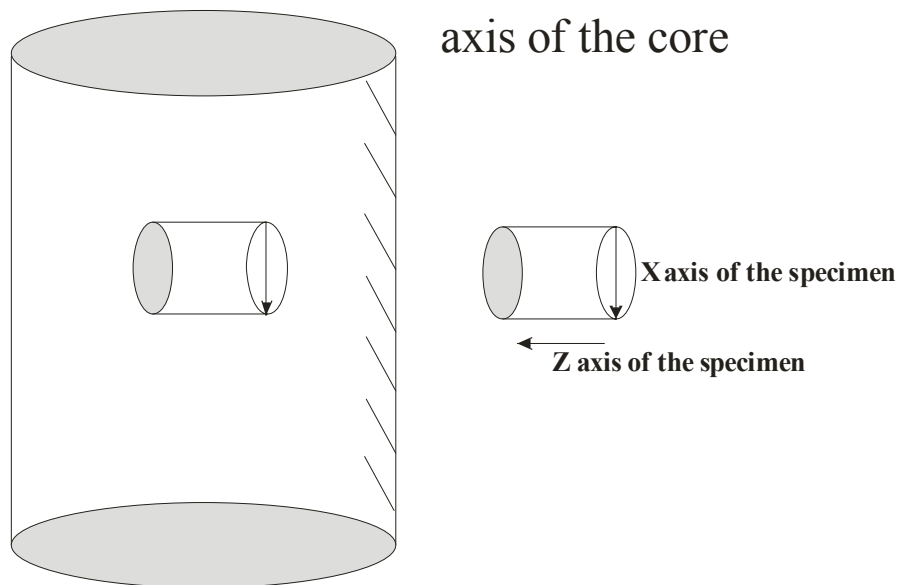


Figure 1:

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