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eEarth Discussions

Interactive comment on "Horizontal versus vertical plate motions" *by* M. Cuffaro et al.

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We have two comments, one scientific and one on the new submission system.

1) The reviewer 1 in a way acknowledges that the content of the ms is not wrong, but he considers it as not of scientific interest. What is the standard or the value of a scientific paper? Is it what is reinforcing or in the line of the current opinion of scientists? Very often is exactly the contrary.

A large number of bricks do not make a nice palace. The way an architect combines the bricks builds a good or a bad edifice. Similarly in science, how everybody interprets data is subjective. In the case of our paper, we see intriguing information on the steady-state ratio between horizontal and vertical plate motions that is alternatively considered trivial by the referees 1 and 2. The far smaller uplift or subsidence rates in which the horizontal motion is absorbed and partitioned at plate boundaries remains in our

opinion a fundamental observation of their passive role that cannot be explained by the present dominant paradigma on the plate tectonics forces.

The reviewer 1 reports that the horizontal motions are much smaller than vertical ones, but we guess this is only a misprint. He also agrees that regardless what is going on at plate boundaries, horizontal motions will go on: this is the crucial point, i.e. plates move regardless what is occurring at their boundary if the initial conditions are maintained. This might indicate that a force is uniformly distributed and acting on their whole volume, and supporting what we are suggesting, i.e. plate boundary forces such as ridge push and slab pull are ancillary in the energetic system. As shown by Scoppola et al. (2006), the Earth's rotation could explain this discrepancy, combining astronomical tangential forces and mantle convection.

2) In a real peer review system, referees should provide an objective comment on the paper they are evaluating. They should not know who are the other referees and in particular they should not be aware about their opinions in order to be not influenced. The new eEarth submission system, whether is right or wrong, is publicly providing the comments among each other. I am not saying that in our case the first one influenced the second referee, but this cannot be excluded a priori.

Interactive comment on eEarth Discuss., 1, 63, 2006.