



Interactive  
Comment

# ***Interactive comment on “Estimation of successive co-seismic vertical offsets using coeval sedimentary events – application to the Sea of Marmara’s Central Basin (North Anatolian Fault)” by C. Beck et al.***

**C. Sorlien**

Christopher.Sorlien@ucsb.edu

Received and published: 20 July 2014

I wrote a draft of this comment before reading the Lisa McNeil review, which has some similar thoughts. I read part of the manuscript and only skimmed other parts, so these comments only address two issues.

Beck et al claim that they can ignore the 15 deg pitch=rake (they mis-call it "dip", which it is not) seen by submersible or ROV on the scarp. They say 15 deg rake and 144 cm vertical makes unreasonable strike-slip amount. Someone should check my trig, but I

C1620

Full Screen / Esc

Printer-friendly Version

Interactive Discussion

Discussion Paper



come up with the strike-slip component (assuming vertical fault) for 15 deg rake and 1.44 m vertical is 5.4 m, which is entirely reasonable and expected.

They then say the rupture length is only 8 km, which makes no sense (they lean towards near pure normal slip, which is certainly not the case for most quakes there). Then, they come up with the low magnitudes, M5.9 to 6.6 based on that.

This should not be published like this. In fact, it has consequences to hazard evaluations, and thus to people. It adds to the general confusion that is still ongoing about the North Anatolian fault system in Marmara Sea (meaning, papers with young northern branch with 4 km displacement vs. papers with  $\sim 18$  mm/yr for at least last half million years, and inferred  $>30$  km displacement; also even 2014 and 2013 papers with no active faults on Southern Shelf).

Less important, the manuscript should reference McHugh et al 2014 Marine Geology, Seeber et al. 2006 Geology, and Kurt et al 2013 Geophysical Research Letters; the latter two papers deal with the normal component of displacement in releasing segments of the northern branch.

Christopher "Chris" Sorlien

---

Interactive comment on Nat. Hazards Earth Syst. Sci. Discuss., 2, 4069, 2014.

Full Screen / Esc

Printer-friendly Version

Interactive Discussion

Discussion Paper

