



New GPS velocity field for the Arabian-Eurasian collision zone

Robert King (1), Simon McClusky (2), Philippe Vernant (3), Semih Ergintav (4), Galaktion Hahubia (5), Fakhraddin Kadirov (6), Samir Mammadov (6), Ruben Stepanyan (7), Tamara Guseva (8), and Vadim Milyukov (9)

(1) MIT, ERL, DEAPS, Cambridge, United States (rwk@chandler.mit.edu, 617 253 6385), (2) ANU, Canberra, Australia, (3) Lab. Geosci., Univ. Montpellier 2, Montpellier, France, (4) TUBITAK MRC, EMSRI, Gebze, Turkey, (5) NAPR, Tbilisi, Georgia, (6) GI, ANAS, Baku, Azerbaijan, (7) NSSP, Yerevan, Armenia, (8) UIPE, Moscow, Russia, (9) Moscow University, Moscow, Russia

We will present a new GPS horizontal velocity field for the Arabia-Eurasia collision zone incorporating continuous and survey-mode observations from eastern Turkey, Russia, Georgia, Armenia, Azerbaijan, and Iran. Compared with our previous field (Reilinger et al., 2006, JGR), the new field has over 100 additional sites with horizontal uncertainties less than 1 mm/yr. The resulting velocity field will substantially improve estimates of slip rates on major “plate” bounding faults (Bitlis-Zagros system, Main Caucasus Thrust, Pembak-Sevan-Sunik, North and East Anatolian) as well as intra-plate deformation (Lesser Caucasus-Anatolian Plateau, Central Anatolia). We will consider the implications of these improved estimates of surface motions for earthquake hazards and the dynamics of plate motions and deformation with an emphasis on examining the influence of mantle dynamics (subduction, delamination, drip tectonics, etc.) on surface deformation.