



## Toward a unified geodetic surface velocity field for the Mediterranean and Europe

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Over the last two decades, considerable progresses have been made in mapping the surface velocity field over Europe and the Mediterranean area using spatial geodesy. However, the methodology required to derive of a unified, homogeneous velocity field at the plate boundary scale, including the most extensive set of results published so far and continuously improving with time has still to be defined. EPOS aims at the integration of Solid Earth Data and results at the European level. EPOS is now at the step of defining its future core services. Among them, the realization of a Mediterranean and pan-European velocity field could be a possible product. As a preliminary study towards this goal, I combine 28 recently published GPS results sampling the Mediterranean and Europe. The combination allows to evaluate both the precision of individual solution and their cross-consistency. The resulting horizontal velocity field includes 1495 sites, with 1276 sites in the Mediterranean area from west of the Alboran Sea to the Caucasus. Statistics of the combination indicate that most sites are usually determined at the  $\sim 1$  mm/year (1-sigma confidence level) level, and that the average level of agreement between individual solutions is usually at the order of 0.4 mm/yr or better. Nonetheless, the combination underlines that reference frame definition, uncertainties handling, and relative weight between continuous GPS and campaign results is highly heterogeneous among solutions. I will discuss some proposition to overcome these difficulties. As a further step, I will discuss the possible future plan to move towards a continuously improving velocity field in the frame of EPOS as a possible collaborative project. Finally, the velocity field can be used as a summary of our current knowledge of the kinematics of the Mediterranean and helps to point out the main unresolved kinematics questions.