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# Can low-latency UT1 estimates be improved combining VLBI intensive and daily GPS sessions?

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VLBI intensive sessions are observed in order to allow a rapid update of UT1 estimates that are essential, e.g., for deep space missions. Such sessions with a duration of about one hour take place almost every day, making use of a single long baseline (Wettzell-Kokee or Wettzell-Tsukuba). Presently, because of the short VLBI sessions and the one-baseline network, the pole coordinates, nutation offsets and station coordinates are typically fixed when determining UT1 values, which results in a dependency of the UT1 estimates on the quality of the a priori values for these parameters, polar motion being the most critical factor. In view of the progress made with e-VLBI, it will eventually become possible to get VLBI intensive results in near real-time, that can be combined with rapid or ultra-rapid global solutions from GPS.

With this contribution we assess the quality of UT1 estimates resulting from increasingly more sophisticated combination approaches, from introducing rapid GPS polar motion estimates into the VLBI-only solutions up to a rigorous combination of all parameters common to both techniques including troposphere (with identical parameterization and models, fully exploiting the complementarity of the VLBI and GPS normal equation systems).