

Figure S1. The PA test results of the ICs (the **left** panel shows the results without colored noise, and the **right** panel shows the results with colored noise; the blue line is the GPS data, and the black and red lines are the maximum and minimum values of the simulation results, respectively).

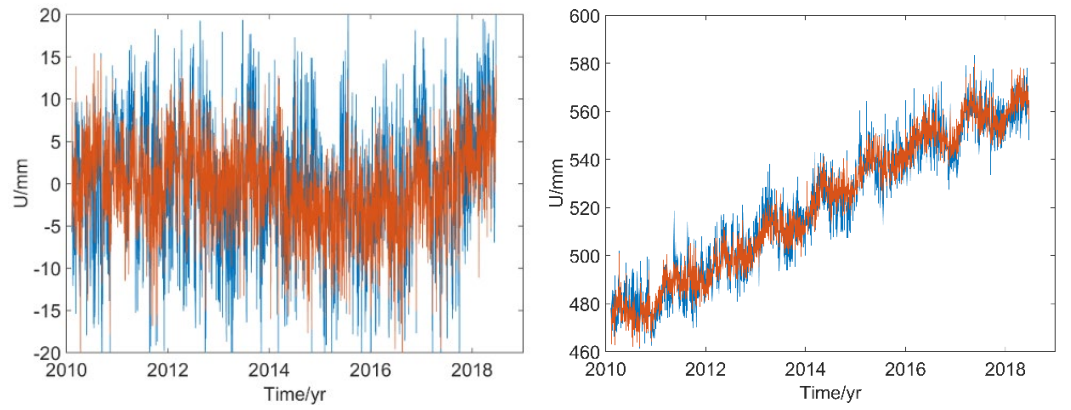


Figure S2. The residual time series (**left**) and raw time series (**right**) at station GMEZ before and after regional filtering by performing ICA (the blue lines are the raw time series, and the orange lines are the filtered time series).