

Determination and analysis of Herstmonceux geodetic heights for the period between 1984 and 2022

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Following the NSGF Analysis Centre 'SSEM' work towards its submission for ITRF2020, we have carried out further research using the SATAN analysis package with the main goal to improve the quality of station height time series. A particular interest is whether the ITRF2020 height time series for Herstmonceux, publicly available online, contains contamination from the historical period when Stanford interval counters were used (1990-2002) and when their known range-dependent errors were not fully compensated; such contamination has the potential to compromise long-term geophysical interpretation of the height series in this fore-bulge collapse zone.

We present results whereby potential systematic range errors are accommodated within the weekly (two-weekly for 1984-1993, LAGEOS-only) LAGEOS, LAGEOS-2 and Etalon solutions using no a-priori bias information except the measured Stanford errors. A comparison is carried out between the height series where the Stanford systematics are accommodated and where they are not