

# Two-way Satellite Time and Frequency Transfer: Overview, Recent Developments and Application

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Two-way satellite time and frequency transfer (TWSTFT) has been recognized one of the most accurate means for remote clock comparisons. It is the advantage that the symmetry of the signal paths of two earth stations makes the errors to be mostly canceled. In two-way links, it is found that there are diurnal variety errors whose magnitude is  $1 \sim 3$  ns in most TWSTFT results. Combined with the character of diurnal variety, the diurnal variety error is removed by function fitting method and the precision is improved to about 0.3 ns. TWSTFT is widely used in time and frequency community, satellite navigation and satellite orbit determination. TWSTFT is developed continually in recent years and the future.

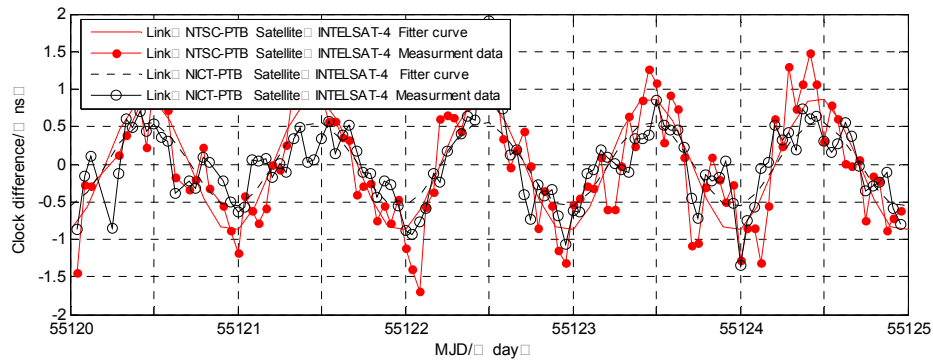


Fig. 1 The results of NTSC and NICT with PTB in TWSTFT

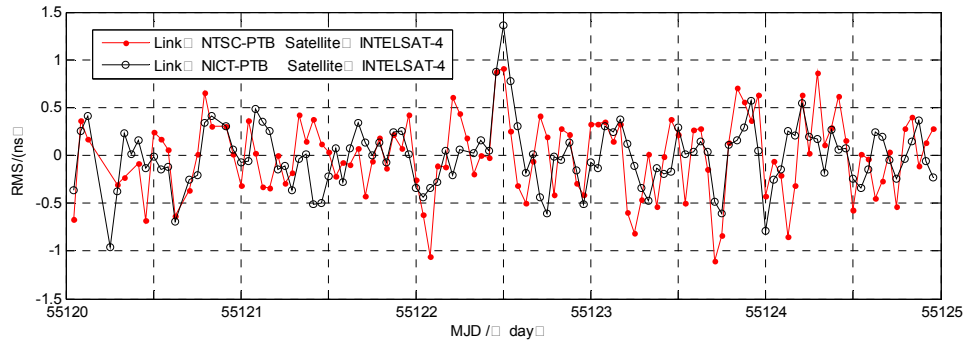


Fig. 2 The residuals of NTSC and NICT with PTB in TWSTFT