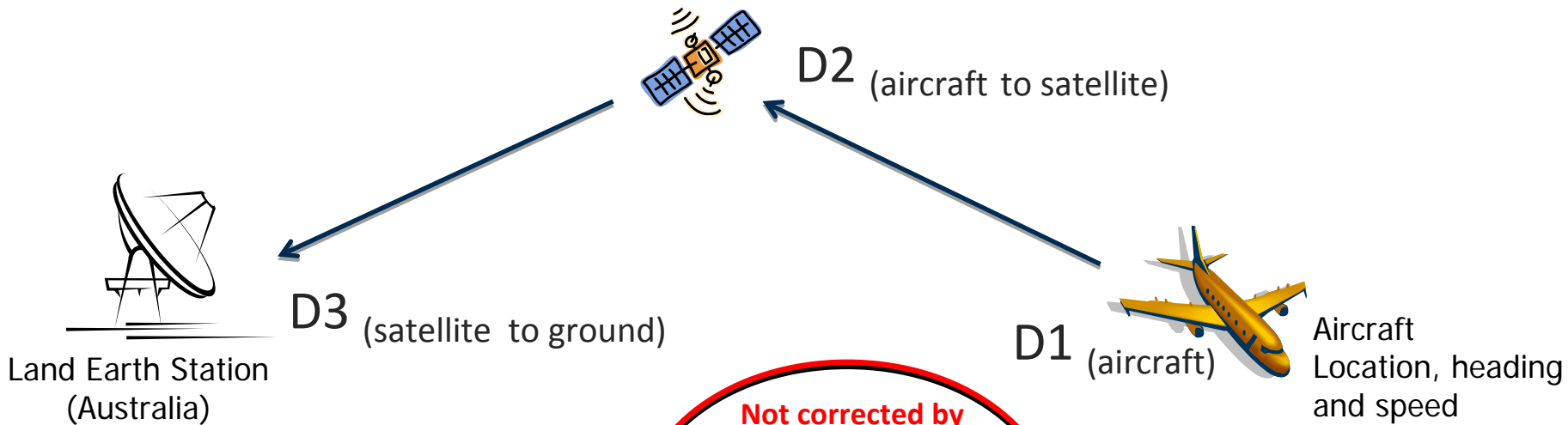


Doppler correction contributions

Satellite Location & Speed



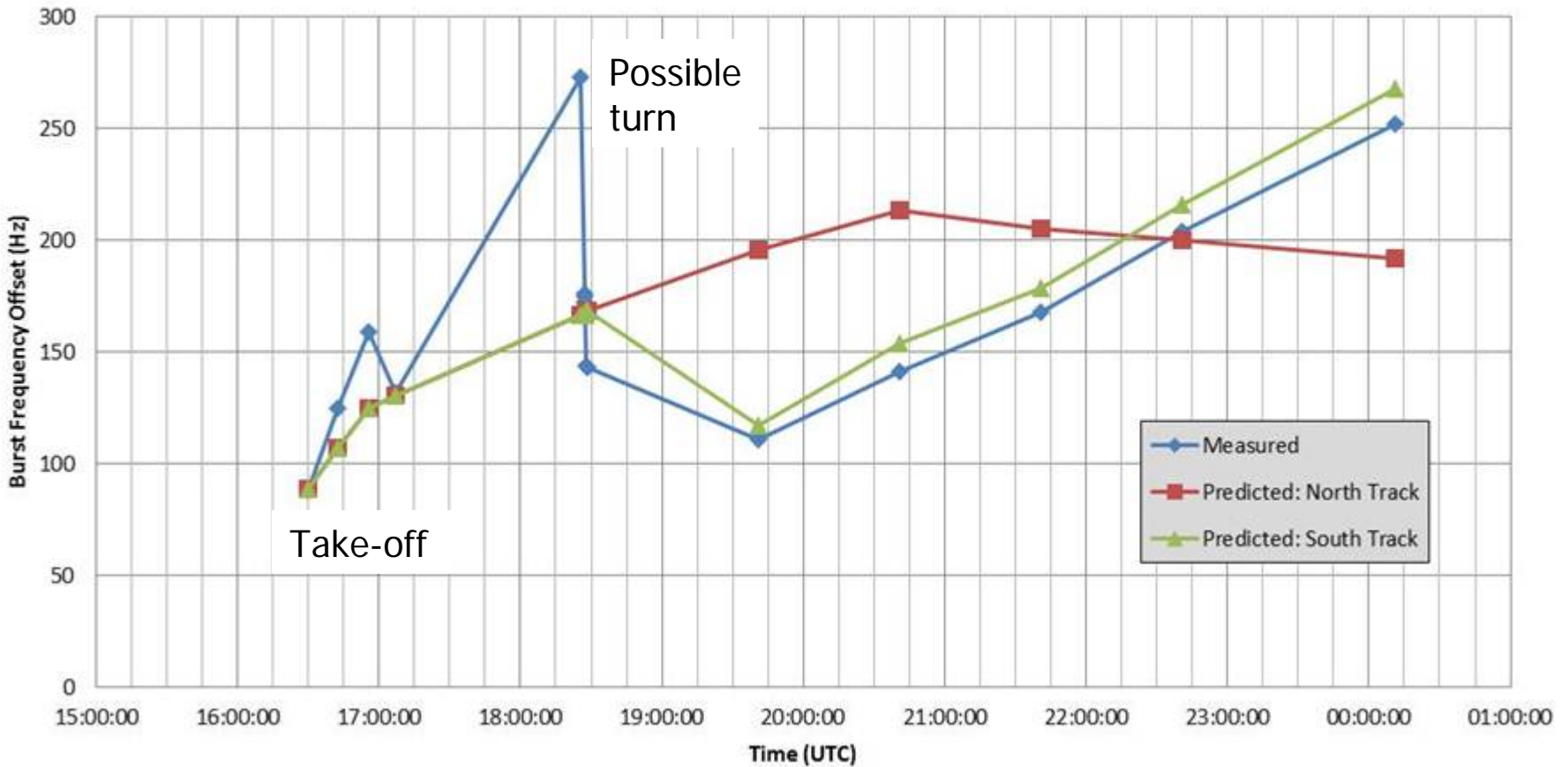
$$\text{Total Doppler} = D1_{\text{aircraft}} + \text{Not corrected by system} = \text{measured frequency offset} + D2_{\text{aircraft} \rightarrow \text{satellite}} + D3_{\text{satellite} \rightarrow \text{ground}}$$

The burst frequency offset is the difference (due to the Doppler contributions) between the expected received frequency and that actually measured.

D2 is a combination of the Doppler components due to the satellite motion, which is accurately known, and the aircraft heading and speed. Using the burst frequency offsets measured at the land earth station, it is possible to compare against the predictions for aircraft heading and speed.

MH370 measured data against predicted tracks

MH370: Burst Frequency Offset Analysis (450 knots)



Example Southern Tracks

(tracks ends at 00:11 UTC)

