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# Vertical Height Errors when Mixing Trimble 4000 SST and Trimble 4000 SSE Observations

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## Introduction

Problems when mixing GPS phase observations between Trimble 4000 SST and Trimble 4000 SSE receivers have been reported by Fritz Brunner (Investigation of Height Repeatability From GPS Measurements, Fritz Brunner and Paul Tregoning, Australian Journal of Geodetic and Photogrammetric Surveying, No. 60 June, 1994, pp. 33-48). By collecting and analyzing data from short and zero baseline configurations, he suggests that differences in how each of the receiver internally processes the observations can cause vertical position errors of up to 40 mm.

In addition to full wavelength L1 and half wavelength L2 phase measurements, the Trimble 4000 SST receiver records C/A pseudorange observations. The SST receiver is not capable of tracking a second type of pseudorange signal, nor is it able to track full wavelength L2 phase observations. On the other hand, the Trimble 4000 SSE and Trimble 4000 SSI receivers are capable of observing two pseudorange observation types and tracking full wavelength L1 and L2 phase measurements. The types of pseudorange observables produced by the SSE and SSI receiver depend on whether or not A/S is activated.

[See attached .pdf file for more.]

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