

An Examination of the Stability of Monuments used in Permanent GPS Networks

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We are using the daily station position estimates from analysis of two permanent, continuously operating GPS networks to assess the relative stability of the various types of monumentation represented in these networks. One network consists of about 45 globally distributed stations often called the FLINN or IGS network. The other consists of about 20 stations in Southern California which we refer to as the Dense Geodetic Array (DGA). The DGA is rapidly expanding, and is projected to grow to 200+ stations within a few years. This expansion, and expansion of other networks world wide, require the construction of new monuments which for logistical, financial, and environmental reasons take on various forms.

Monument types represented so far in the networks maybe loosely classified as 1) braced deep anchors, 2) buildings or other massive structures, 3) towers, and 4) concrete piers. Preliminary results suggest that none of these types of monuments should be excluded from consideration when building a new station.

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