

Error analysis of GPS point positioning

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Ionosphere error

- dual frequency correction
- IGS ionosphere model correction
- broadcast (Klobuchar) model correction
- no correction

Satellite clock error

- IGS clock corrections
- broadcast clock corrections
- broadcast group delay correction

Orbit error

- IGS/NGS precise (post-processing) orbits
- IGS/NGS precise predicted orbits
- broadcast orbits

Troposphere error

- FSL/MAPS troposphere models
- measured surface data
- generic seasonal model (Herring)
- no correction

Multipath error

- L1
- L2
- antenna and site characteristics

Receiver errors

- C/A and L1 code range
- codeless L2 pseudorange (e.g. cross correlation)
- interchannel bias

Geometric effects

- DOP's -- PDOP, HDOP, VDOP, TDOP
- positional effects (high vs. low latitudes)
- accuracy
- +++ horizontal position
- +++ ellipsoidal height
- +++ time

Robust processing effects (adjustment)

- outlier detection
- weighting strategies
- alternative norm processing

Note: this list only covers elements significant (or potentially significant) for meter-level results. The list would be

considerably longer for 1-10 cm level accuracies.