

Abstract Submitted
for the APR09 Meeting of
The American Physical Society

A numerical way around the propagation-delay equations in GPS

ARGENIS DA SILVA, JONATHAN DOWNLING, Louisiana State University — We present a numerical self-consistent way to account for relativistic effects in GPS. Our approach has two main advantages respect to the use of the traditional method of flat space-time propagation-delay equations plus relativistic corrections. At First, any improvement of our knowledge about the spacetime geometry will not produce further changes in the algorithm. And second, all the relativistic effects are fully and clearly accounted for. On the other hand, this numerical approach could be used as a seed to improve a method proposed in the literature based in the world function. To illustrate the ideas behind our method, we use the Schwarzschild geometry as a testbed.

Argenis Da Silva

Date submitted: 20 Mar 2009

Electronic form version 1.4