

Memo

To: Record
From: John Gipson
Date: January 27, 1999
Re: How to Use nutkal

This memo describes the use of the GSFC nutation Kalman filter program *nutkal*. This program reads in a series of nutation values from the snoop nutation files. These will be named something like *snoop_aee_nut_1102g*. It produces a nutation mod file. It assumes that the nutation offsets behave like an integrated random walk (clearly not correct). This mostly determines how to add noise when propagating from one epoch to another. If the data is good, it won't make much difference.

The source of this is `leo:/users/jmg/utls/nutkal`. This directory has a makefile as well. The program needs an "aee_nut" file produced by snoop.

Recipe:

1. Start with a TRF solution where nutation offsets are estimated.
2. Run snoop on this to extract these offsets.
3. Run nutkal to filter and smooth them.

Nutkal will ask you for an input and output file. It will also ask if you want to make comparison files. If you answer "yes", this will produce two additional files *nutlong.prn* and *nutob.prn*. These files contain the input data and the Kalman filtered version. Useful for making sure the nutation series makes sense.