

To: IERS HF-EOP Working Group
From: John Gipson
Date: 2019-Oct-9
Re: Minor bug in program to compute HF-EOP

Mathis Blossfeld informed me that Michael Gerstl found two minor bugs in the file hfeop_xyu_mod.f. The bugs are in the subroutines calc_gmst and calc_nut_arg, and both involve the calculation of smaller non-linear terms in the tidal arguments. I have corrected the bugs, and renamed the old file hf_eop_xyu.f.bad. I spot checked the differences using the model 2017a_astro_xyu during the CONT17 period (2017-Nov-28 through 2017-Dec-12).

The table below summarizes the maximum values and the RMS of the model during this period, and does the same for the differences between the corrected and the uncorrected models. The maximum error in PM is ~ 0.3 μ s, and in UT1 it is 0.02 μ s, both of which are negligible when compared to the size of the original EOP values.

		X-Pole	Y-Pole	UT1
Model	Max	904.36	743.35	46.79
	RMS	332.48	255.87	27.96
Delta	Max	0.29	0.2	0.02
	RMS	0.13	0.09	0.01

The charts below plot the delta for X-pole and UT1 for this period.

