

I tried to make some comparison of the various MF candidate models by looking at how well they fit to an independent Ørsted data set.

I used 1.5 days of Ørsted data from a very quiet period in October (October 6, 12:00 UT to October 7, 24:00); Kp was between 0o and 1o. Ørsted was almost in a dawn-dusk orbit at that time (LT 7/19), so I used all data (no selection according to local time).

The four MF candidate models (A1, B3, C1, D1 in Frank's terminology) have been propagated to that date using the mean of the SV models (mean4).

**The result:**

It turned out that there is rather little difference in the misfit between the four models (between 13.2 - 16.1 nT rms for the scalar residuals of all latitudes - fit to the vector components at non-polar latitudes is about 14 nT for B<sub>r</sub>, 18 nT for B<sub>theta</sub>, and 12 nT for B<sub>phi</sub>, for all 4 models).

The change in misfit if a correction of external sources is included is much larger compared to these differences: If a static external field (P10 geometry) of 20 nT is subtracted (this is a typical value of the offset of the ring current), the model misfit drops from typically 13-16 nT to 6.0-7.6 nT!

Based on this comparison I do not think that one can evaluate whether one particular candidate model is better or worse than the others; all four candidate models fit this data set about equally well (or perhaps I should state: equally bad. I expect that the corresponding parent models (from which the candidate models are derived) would fit this data set much better, especially if they include a description of the external sources).