Reply (#2) to the Referees

We thank the Referees for their suggestions. We incorporated them in the revised manuscript. Here are our answers:

Referee 1 Report

R: Lines 170-173 state that plasma flow directions are better modeled when the upstream magnetic field is close to radial
Lines 173-176 state the the flow direction is modeled worse for low cone angles of the BS crossing point.
This is confusing. Could the authors change the wording to "for lown Sun-Earth-Spacecraft angles, i. e. positions near the subsolar bow shock". If that is indeed what they mean?

A: We agree that the cone angle theta_CBS was not properly defined. The sentence was reformulated (ll. 173-175).

Referee 2 report

R: It might help the reader to provide (e.g., around Line 139) a clear statement such as "The use of a radial upstream magnetic field (IMF) is used to model the magnetosheath magnetic field (B(rmod)), which is then used as a proxy for a modeled magnetosheath velocity vector.". [readers can quickly understand the

concise term "proxy measure"]

A: We added a corresponding sentence (ll. 138-139).

R: Figures 1-5 are still confusing to the general reader, because it appears that the same magnetosheath model run is used to create both the blue traces of the left side (velocity components) and right side (magnetic field) panels. It is suggested that the Figure(1) caption clearly mentions that the left side panel model velocity components are proxy values, created using a radial upstream magnetic field; while the blue (model) magnetosheath magnetic field components of the right side panels use the actual upstream magnetic field observations. Perhaps different shades of blue (with explanation in the caption) for the left and right panels would also be useful to distinguish these two different runs.

A: We added the suggested description in the caption of Fig. 1 (p. 8) and updated the figures.

R: Lines 173-174: "that the flow direction is modeled worser for low cone angles" -> "the average deviation between observed and modeled velocities is larger for small cone angle".

A: Done (ll. 173-175) and, in addition, modified by a suggestion of the other Referee.

R: Lines 191-192: "There is not trend in delta." -> "No clear trend in the values of delta with distance d is observed."

A: Done (ll. 189-190).

Thank you,

The authors