

Title: The incorporation of an organic soil layer in the Noah-MP Land Surface Model and its evaluation over a Boreal Aspen Forest

Authors: Liang Chen et al.

The authors have responded adequately to the reviewer comments on the manuscript.

General comments: I suggest that the authors should review the text (e.g., phrases construction), especially in the abstract and results.

A few minor comments to address:

- Line 145: Lack includes the subscript in the term  $f$  of the equation.
- Lines 209 and 210: only CTL simulation? I understood that the authors analyzed together CTL and OGN simulations and observations.
- In a few sentences the authors do not specify the object of comparison. For example:

Lines 215-218: "However, for deep layers (10-100cm), the OGN simulated much lower (higher) soil temperatures during summer (winter), especially for the drought years 2002-2003, leading to a good agreement between OGN and observations for 2<sup>nd</sup> and 3<sup>rd</sup> layer soil temperature (Figure 4b, c)."

Higher and lower than ....

I would replace the above sentence by "However, for deep layers (10-100cm), soil temperature from the OGN is lower (higher) than the CTL simulation during summer (winter), especially for the drought years 2002-2003, leading to a good agreement between OGN and observations for 2<sup>nd</sup> and 3<sup>rd</sup> layer soil temperature (Figure 4b, c).", or by "However, for deep layers (10-100cm), the OGN soil temperature has a good agreement with the observations, which does not occur in the CTL simulation."

Lines 227-228: Compared with?