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Hydrology and Earth System Sciences Discussions

Interactive comment on "Improvement of surface albedo parameterization within a regional climate model (RegCM3)" *by* Y. Bao and S. Lü

Anonymous Referee #1

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This paper presents simulation of surface characteristics in Arid Region of North China using a parameterization for calculating surface albedo of Solar Zenith Angel (SZA) incorporated with RegCM3. Some interesting results were obtained. It is shown that RegCM with SZA method (RCM SZA) considerably improve the cold bias of original RegCM (RCM ORI) in air surface temperature in East Asia with 1.2 degree increased in summer.

This paper contains valuable results. However, some parts of the descriptive contents of the manuscript are not well written. In my opinion, it requires some revisions before it will be published.

Specific points:

Page 1660, line 4: The similar decreases happen to the albedo simulations in other seasons like spring and autumn but as obvious as that in summer (not shown). I think it should be shown here.

Page 1661, line 22 and 23: "The latent heat flux peak lags the sensible heat flux by a few months. Due to the onset of monsoon season." Should be "The latent heat flux peak lags the sensible heat flux by a few months due to the onset of monsoon season.."

Page 1661, line 29: "In northern China (not shown)..." I suggest this paragraph can be canceled.

Page1663, line 13: "The simulated East Asia summer monsoon precipitation is also evaluated with CRU precipitation (not shown)". I suggest this paragraph can be canceled..

Page 1676, Figure 6: Where is figure (d)?

Check the reference list, some family name and given name of the authors are confused.

Interactive comment on Hydrol. Earth Syst. Sci. Discuss., 6, 1651, 2009.