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Interactive comment

Interactive comment on "The role of snow and ice thickness on river ice process in Songhua River basin, Northeast China" *by* Qian Yang et al.

Anonymous Referee #2

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The paper presents the results of a regression analysis between snow depth and air temperature; and ice phenology and thicknesses using data from 2010 to 2015 for the Songhua River basin in Northeast China. The results of the correlation showed high correlation between snow depth and ice thickness as well as high correlation between air temperature and ice phenology (freeze-up, break-up and mid-winter). These conclusions are basic scientific knowledge for freshwater ice scientists and have been well established over the years. The data can be used for more advanced analysis than just linear regression between basic parameters. The overall structure of the paper is not well laid out. There is no literature review describing what is the current state of knowledge and what is this manuscript adding to the research community. Also, the objectives and how the results of this exercise will be used are not presented. The anal-

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Discussion paper

ysis section is brief and does not explain the details of the data processing. It wasn't clear to me how the hydrometric data was gathered (resolution, methods, accuracy...) and processed and how the dates of ice phenology were extracted from satellite images. The conclusions are brief and is not inclusive.

On a separate note, the language of the manuscript overall is not clear and it seems the text was not read-proof before submission with many repeated sentences (line 55, 60, 70...), many grammatical and spelling errors.

In conclusion, the current version of the manuscript describes with historical data the already established basic science of ice thickening, growth/deterioration of the cover with some correlation between meteorological (snow depth and air temperature) conditions and the dates of freeze-up or break-up. I cannot see any scientific contribution to the ice research community. Therefore, I recommend rejection of this version of the manuscript.

Interactive comment on The Cryosphere Discuss., https://doi.org/10.5194/tc-2019-242, 2019.