Interactive comment on "Seasonal thaw settlement at drained thermokarst lake basins, Arctic Alaska" *by* L. Liu et al.

Anonymous Referee #2

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This paper is well written, clear and technically innovative. It demonstrates the detailed understanding of permafrost landscapes that can be derived from InSAR data. The authors use ancillary data and a thorough field investigation to fully exploit the InSAR information.

Minor comments for the authors' consideration.

p5797, line 23, any comment on how the motion compensation strategy of Zebker et al. (2010) differs from conventional slave to master registration and why you used it?

p5798, line 23-27, the authors are clear that the InSAR values are unlikely to be affected by double bounce effects and changing water levels, however, what about inaccuracies related to more subtle surface saturation? In small flooded patches phase

values would be less reliable. Do you have any such surface conditions? In Fig 4b, there are some patches where the inaccuracies are 80 - 100%, could surface saturation be an explanation for these unreliable patches? A recent paper in RSE discussed this effect specifically for hi-res InSAR over permafrost terrain.

p5807, lines 13-23. GPR profiles are often used to identify the presence of ground ice. Did your GPR data provide any information or confirmation of these general theories and observations about local ground ice?

p5795, line 19,' ice forms in three major mechanisms', replace 'in' with 'by'?

p5806, line 19, 'inversed spatial pattern', replace 'inversed' with 'inverted' ?

p5806, line 23, should one explicitly conclude that the SAC basin is therefore not a closed system?

p5807, lines 8-9, 'that range of 20-35%', suggest change to 'that range from'

Interactive comment on The Cryosphere Discuss., 7, 5793, 2013.