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The Cryosphere
Discussions

Interactive comment on "Growth of a young pingo in the Canadian Arctic observed by RADARSAT-2 interferometric satellite radar" *by* S. V. Samsonov et al.,

Anonymous Referee #1

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General comment: In this study, the dynamics of a young pingo in the Canadian Arctic was analyzed by high-resolution InSAR together with other documents and models. Generally, the significance of this work is moderate, particularly constainted by the narrow scope by investigating a single pingo.

Specific comments The inconsistence bettween InSAR observations and modelled results needs more clarifications. More pingos covered by the swath of R2 SAR data need to be studied to indicate the evolution of pingos in this area as well as to highlight the interaction between permafrost, pingo ice and non-pingo scenarios. More references linked to the permafrost monitoring by InSAR techniques are required, such as:

1)Liu, L., Zhang, T., & Wahr, J. (2010). InSAR measurements of surface deformation over permafrost on the North Slope of Alaska. Journal of Geophysical Research - Earth Surface, 115, F03023, http://dx.doi.org/10.1029/2009JF001547. 2)Chen F. L., Lin H., Zhou W., Hong T.H., Wang G., Surface deformation detected by ALOS PALSAR small baseline SAR interferometry over permafrost environment of Beiluhe section, Tibet Plateau, China, Remote Sensing of Environment, 138: 10-18, 2013. 3)Chen F. L., Lin H., Li Z., Chen Q. and Zhou J.M., Interaction between permafrost and infrastructure along the Qinghai-Tibet Railway detected via jointly analysis of C- and L-band small baseline SAR interferometry, Remote Sensing of Environment, 123: 532-540, 2012.

Interactive comment on The Cryosphere Discuss., 9, 6395, 2015.