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## On the computation of phase inconsistencies of Sentinel-1 interferograms over snow-covered areas

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We have recently investigated the use of SAR interferometry for the mapping of Snow Water Equivalent (SWE) temporal variations using Sentinel-1 data [1]. Maps of temporal changes of SWE, measured with a sub-centimetre accuracy and updated every six days have been obtained over a study area in Finland. This methodology relies on the shift in the interferometric phase caused by the refraction of the microwave signal penetrating the snow layer. In this work, we investigate phase inconsistencies [2] of a sets of three interferograms obtained from three Sentinel-1 images acquired along the same orbit at different acquisition times to study the snow melt. We find that while phase inconsistencies are not expected to be present in case of examining surfaces covered with frozen snow, the scattering mechanism of microwave in the snow layer during the melting phase affects both the interferometric phase and coherence.

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### References:

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