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# Characterization of tundra lake margins with SAR-data

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Synthetic aperture radar data have been proven to be suitable for monitoring hydrological properties including thaw lakes typical for tundra environments and are therefore a useful method to monitor changes in this region. However, the determination of accuracy of lake margin detection remains to be addressed. The quantification of uncertainties is crucial since such data are used to quantify (in many cases subtle) changes of land surface hydrology associated with permafrost conditions. The advantages and disadvantages of different frequencies with respect to spatial resolutions are discussed for TerraSAR-X, ALOS PALSAR (L-band) and ENVISAT ASAR (C-Band) data for several subarctic sites over Northern Eurasia. This study contributes to the PAGE21 (www.page21.eu, FP7) and COLD (Joint Russian-Austrian project, FWF/RFBR) projects as well as HGF EDA.