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## Observations of Arctic melt ponds and supraglacial lakes from airborne camera data

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In summer, melt ponds on arctic sea ice can cover up to 60% of the total sea ice area, significantly decreasing surface albedo. The latter also holds true for supraglacial lakes frequently forming in the ablation zone of the Greenland Ice Sheet. Therefore monitoring of both, melt ponds on sea ice and supraglacial lakes is of great importance. So far, detection algorithms for both phenomena have been developed separately from each other. Here, we will use airborne optical data of supraglacial lakes acquired during a land ice campaign over north-east Greenland in 2013 and airborne images of melt ponds from the Multidisciplinary drifting Observatory for the Study of Arctic Climate (MOSAIC) campaign to illustrate similarities and differences in the appearance of both phenomena. As an example study, we use an open source processing chain including the Open Drone Map software as well as the AMES stereo pipeline to generate orthorectified photo mosaics. On the basis of these datasets, we will discuss typical detection methods as well as the difficulties they face in the respective environment (f.e. confusion with shadows and bare ice). Besides a modified normalized difference water index we test an adapted random forest approach that was developed for the analysis of MOSAIC melt pond data and conclude with suggestions for future algorithm development.