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Supplement of

Regional albedo of Arctic first-year drift ice in advanced stages of melt from the combination of in situ measurements and aerial imagery

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Supplementary material

Figure S1: Data summary from flight 1 on 31.07.2012

Figure S2: Image based and swath based aggregate scale albedo flight 1 on 31.07.2012

Table 1: Empirically estimated albedo of the four main surface types and their respective standard deviations. Sample (single point) STD is due to spread in *in situ* albedo measurements and total STD estimated as a sum of the series based uncertainty in $\overline{\alpha_j}$ due to spread and the instrumental uncertainty.

Surface type j	average albedo $\overline{\alpha_j}$	sample STD $\sigma_{\alpha_j}^{sp}$	total $\overline{\alpha_j}$ STD $\sigma_{\overline{\alpha_j}}$
white ice	0.55	0.05	0.015
dark pond	0.15	0.04	0.016
bright pond	0.34	-	0.034
open water	0.07	-	0.007

Figure S3: Data summary from flight 3 on 01.08.2012

Figure S4: Image based and swath based aggregate scale albedo flight 3 on 01.08.2012

Figure S5: Data summary from flight 4 on 02.08.2012

Figure S6: Image based and swath based aggregate scale albedo flight 4 on 02.08.2012

Figure S7: Data summary from flight 5 on 02.08.2012

Figure S8: Image based and swath based aggregate scale albedo flight 5 on 02.08.2012