



Supplement of

Advances in CALIPSO (IIR) cirrus cloud property retrievals – Part 1: Methods and testing

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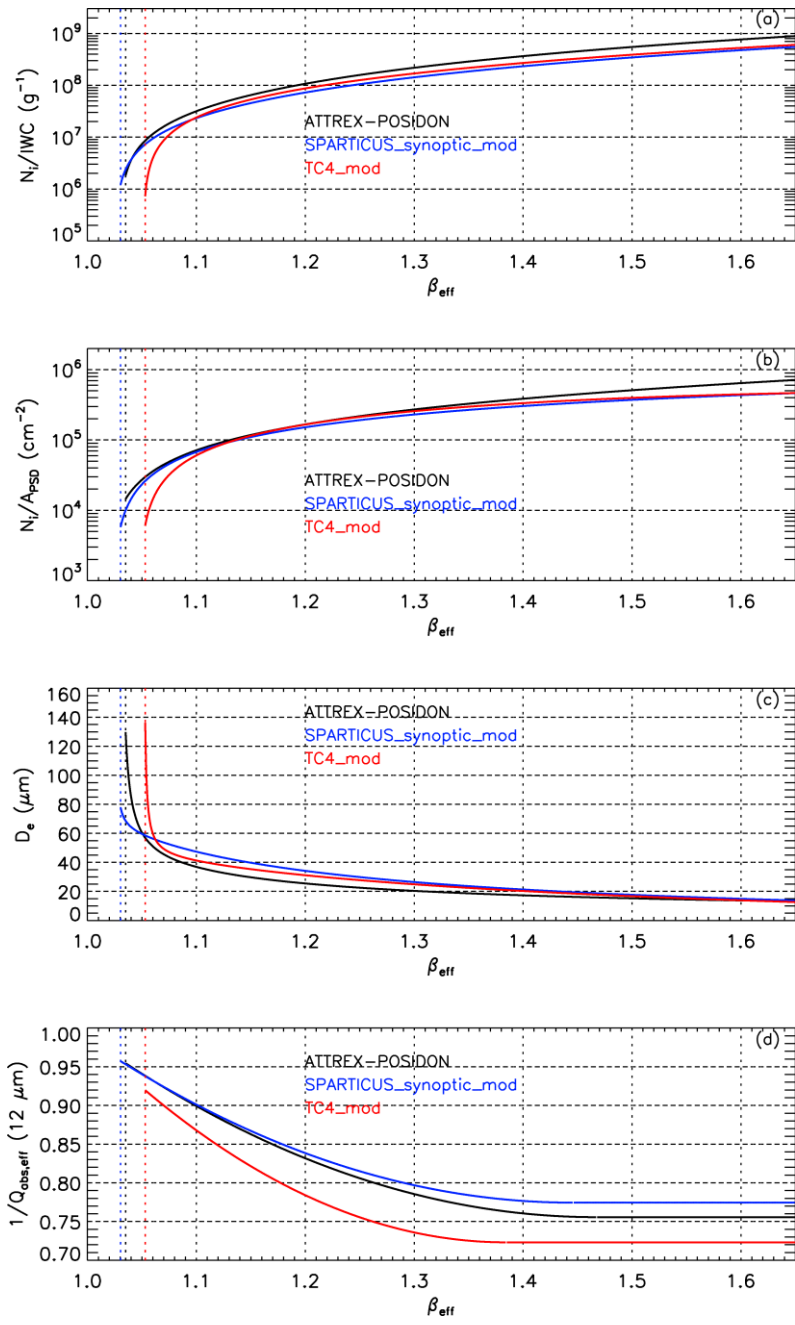


Figure S1: same as Fig. 14 but showing the curve fits only.

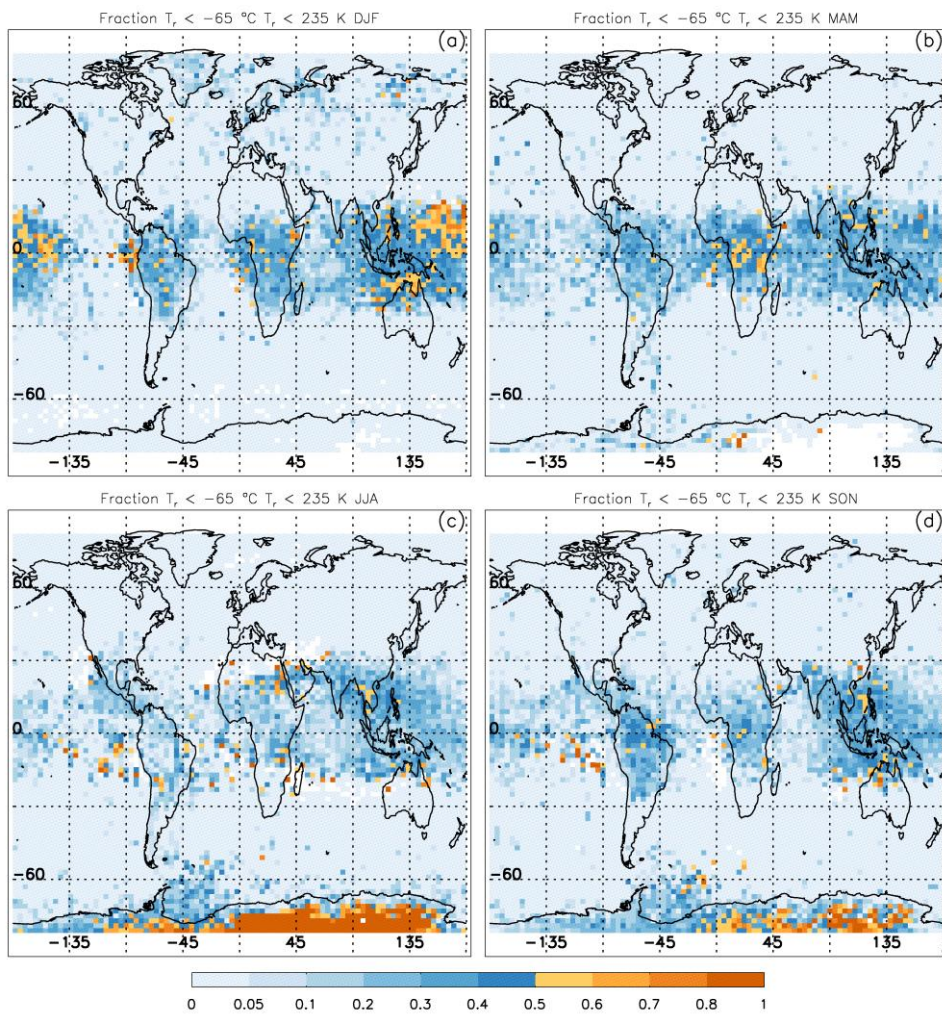


Figure S2: Same as Fig. 16 but for cirrus clouds having $0.3 < \tau < 3$, over oceans and land.

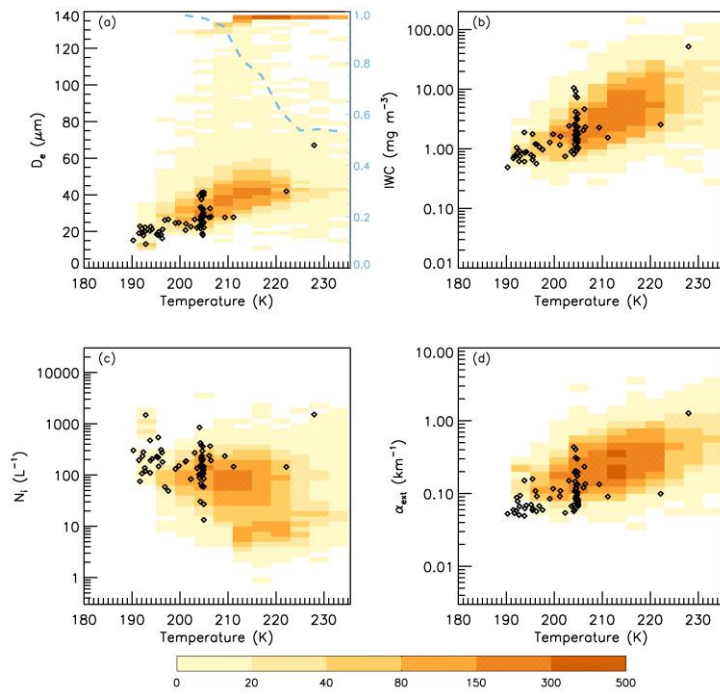


Figure S3: Same as Fig. 18 (ATTREX) but where $\sim 0.3 < \tau < \sim 3$

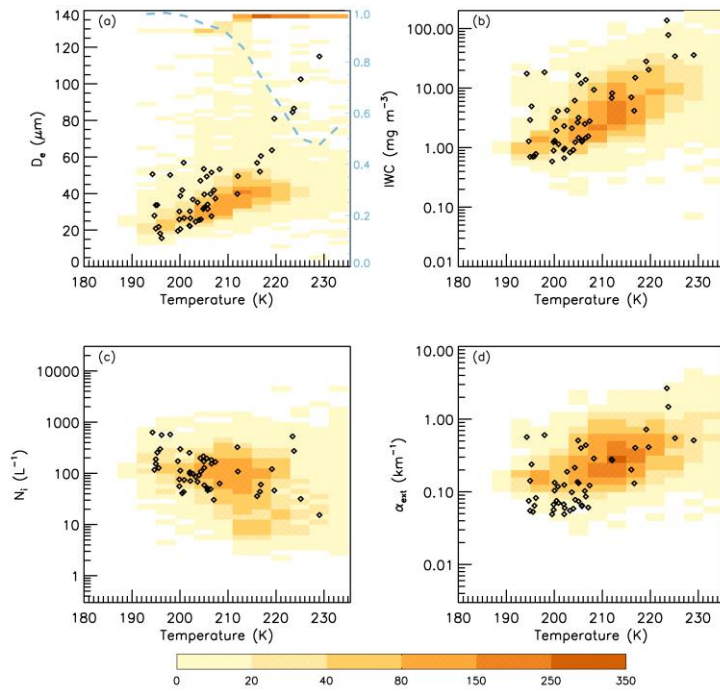


Figure S4: Same as Fig. 19 (POSIDON) but where $\sim 0.3 < \tau < \sim 3$

Table S1: Same as Table 6 but for the POSIDON campaign.

POSIDON	$\sim 0.2 - 0.3 < \tau < \sim 3$			$\sim 0.01 < \tau < \sim 3$		
T_r (K)	193	213	233	193	213	233
Pixel count	151	1448	188	2107	2366	350
$\tau_{\text{abs}}(12.05 \mu\text{m})$	0.17	0.39	0.58	0.04	0.26	0.28
$\Delta\tau_{\text{abs}}(12.05 \mu\text{m})$	0.017	0.020	0.029	0.016	0.019	0.023
τ	0.27	0.69	1.04	0.06	0.45	0.49
$\Delta\tau$	0.033	0.041	0.053	0.032	0.040	0.046
β_{eff}	1.241	1.088	1.060	1.200	1.087	1.050
$\Delta\beta_{\text{eff}}$	0.07	0.03	0.03	0.30	0.04	0.05
$\alpha_{\text{vis}} (\text{km}^{-1})$	0.16	0.29	0.60	0.05	0.20	0.29
$\Delta\alpha_{\text{vis}}/\alpha_{\text{vis}}$	0.11	0.06	0.06	0.52	0.09	0.10
$D_e (\mu\text{m})$	23	43	61	25	43	136
$\Delta D_e/D_e$	0.16	0.15	1.73	0.97	0.33	>3.00
IWC (mg m^{-3})	1.0	4.6	11.5	0.5	3.4	6.9
$\Delta\text{IWC}/\text{IWC}$	0.25	0.21	1.70	1.45	0.44	>3.00
$N_i (\text{L}^{-1})$	158	66	43	46	44	28
$\Delta N_i/N_i (\text{L}^{-1})$	0.30	0.65	2.73	1.87	1.22	> 3.00