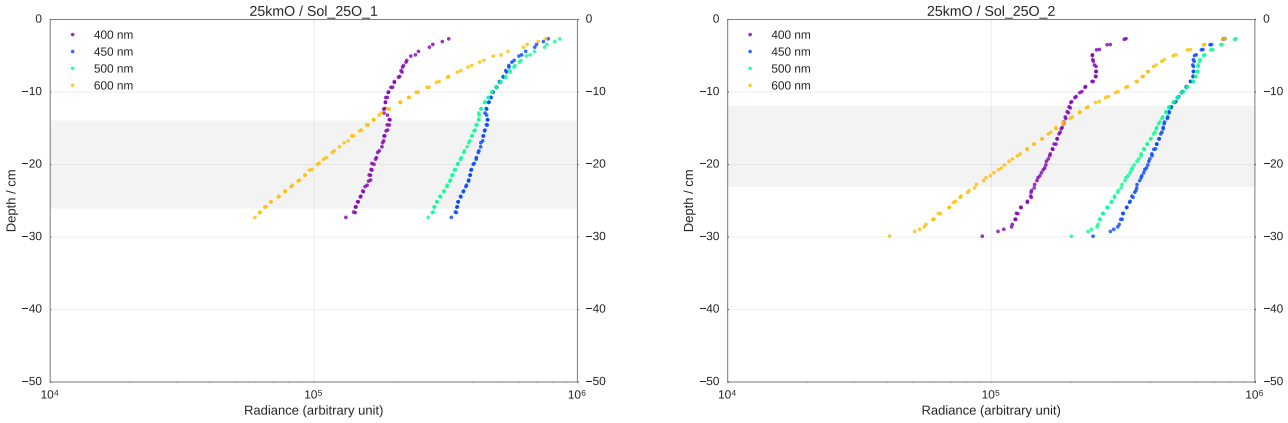
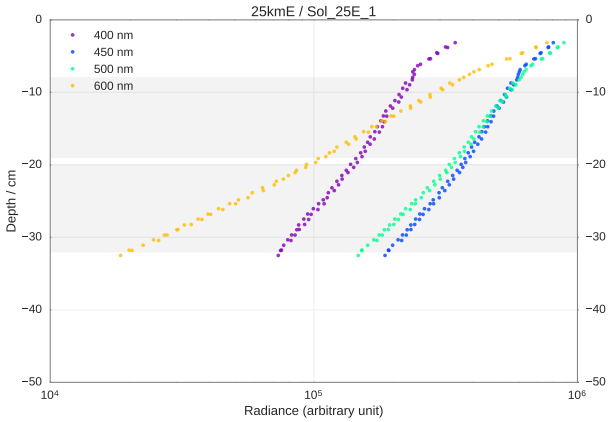
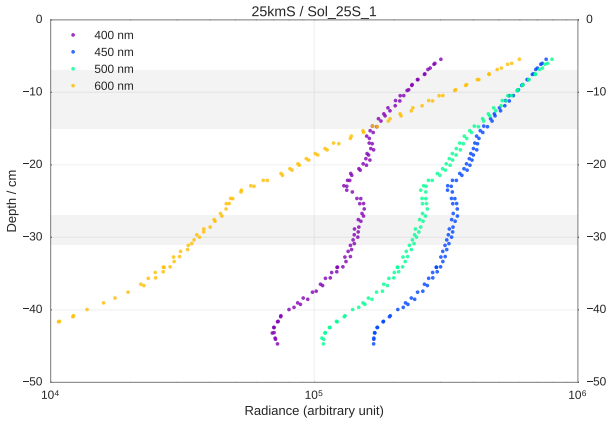
Supplementary materials for "Refinement of the ice absorption spectrum in the visible using radiance profile measurements in snow"

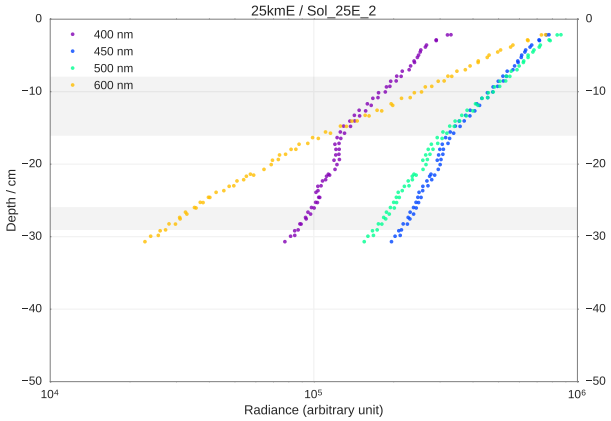
1 Log-radiance profiles

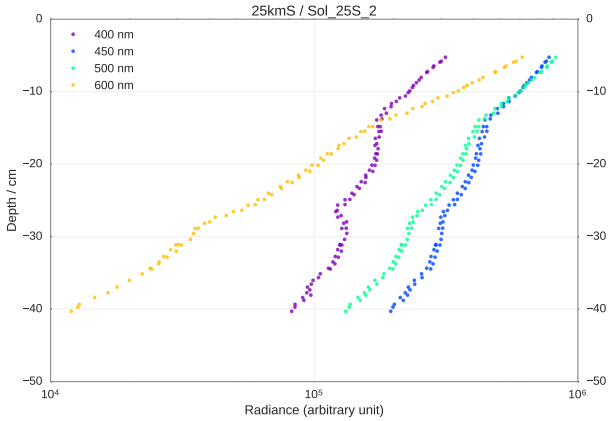
Profile of radiance at 400, 450, 500 and 600 nm collected with SOLEXS around Concordia station during the 2012-2013 and 2013-2014 summer campaign. Gray shades show the homogeneous zones selected by the authors.

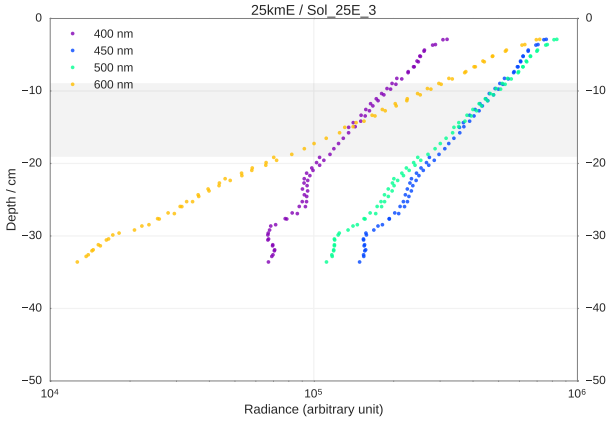


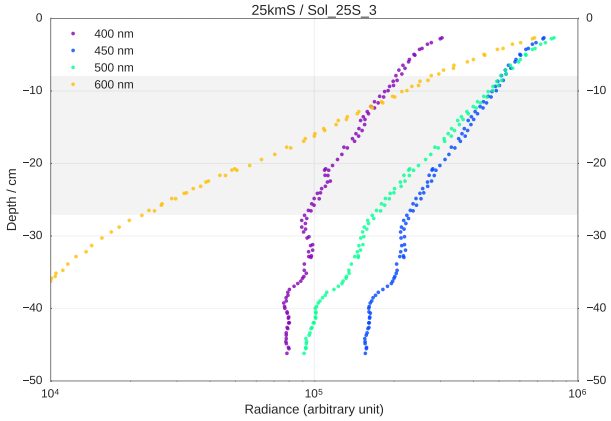

25kmE / Sol_25E_1
400 nm
450 nm
500 nm
600 nm
Depth / cm
Radiance (arbitrary unit)

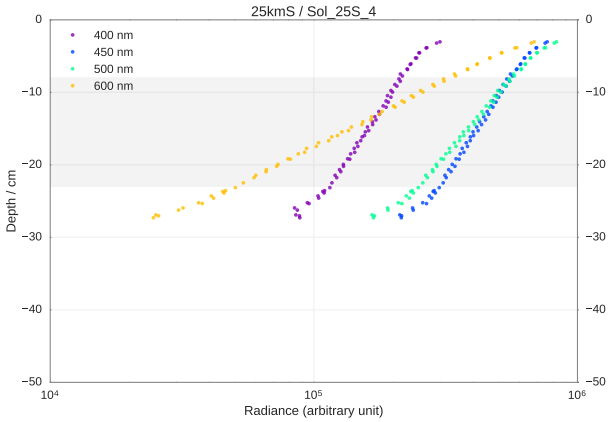

25kmS / Sol_25S_1
400 nm
450 nm
500 nm
600 nm
Depth / cm
Radiance (arbitrary unit)

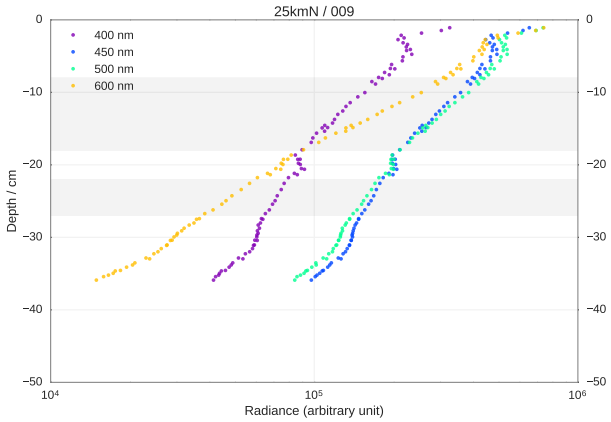

25kmE / Sol_25E_2
400 nm
450 nm
500 nm
600 nm
Depth / cm
Radiance (arbitrary unit)


25kmS / Sol_25S_2
400 nm
450 nm
500 nm
600 nm
Depth / cm
Radiance (arbitrary unit)


25kmE / Sol_25E_3
400 nm
450 nm
500 nm
600 nm
Depth / cm
Radiance (arbitrary unit)


25kmS / Sol_25S_3
400 nm
450 nm
500 nm
600 nm
Depth / cm
Radiance (arbitrary unit)


25kmS / Sol_25S_4
400 nm
450 nm
500 nm
600 nm
Depth / cm
Radiance (arbitrary unit)


25kmN / 009
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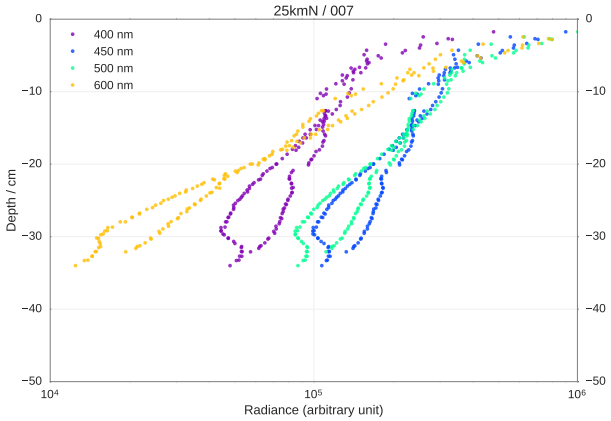
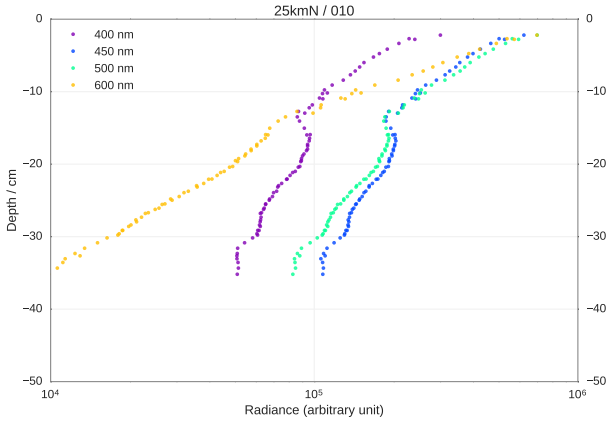
500 nm
600 nm
Depth / cm
Radiance (arbitrary unit)


25kmN / 007
400 nm
450 nm
500 nm
600 nm
Depth / cm
Radiance (arbitrary unit)


25kmN / 010
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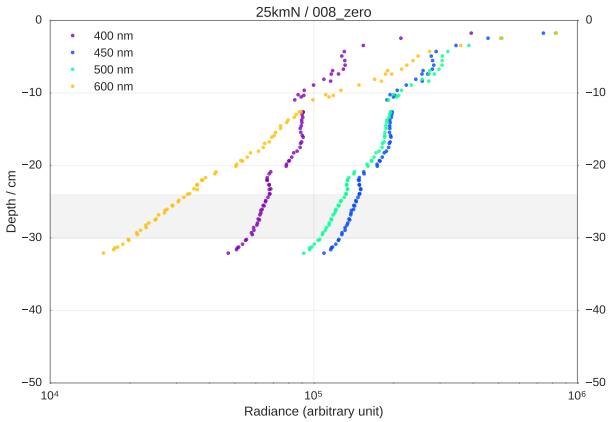
450 nm
500 nm
600 nm
Depth / cm
Radiance (arbitrary unit)


25kmN / 008_zero
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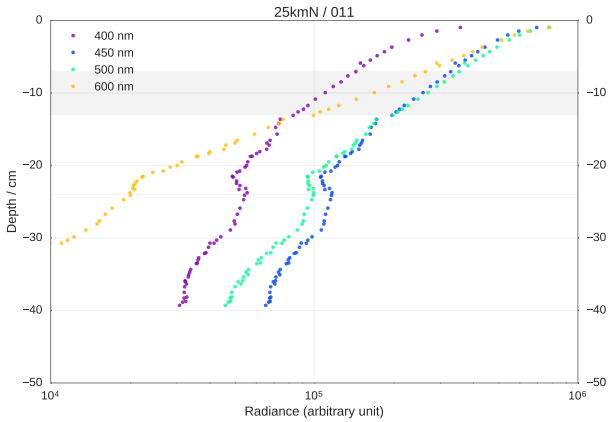
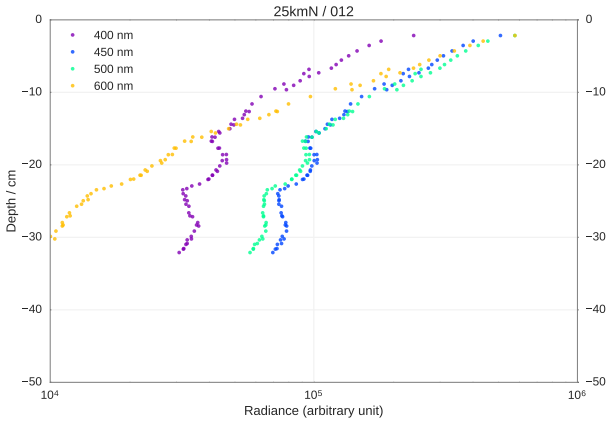
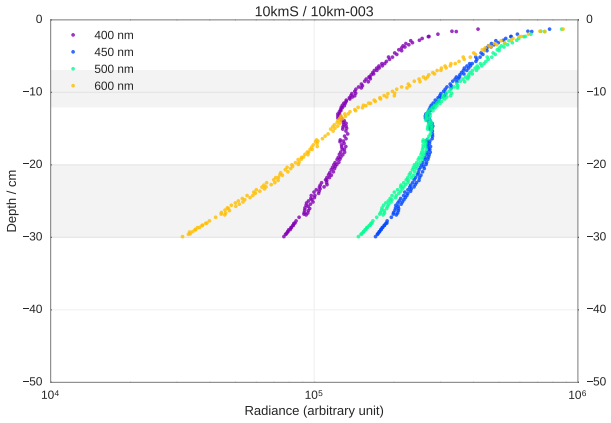
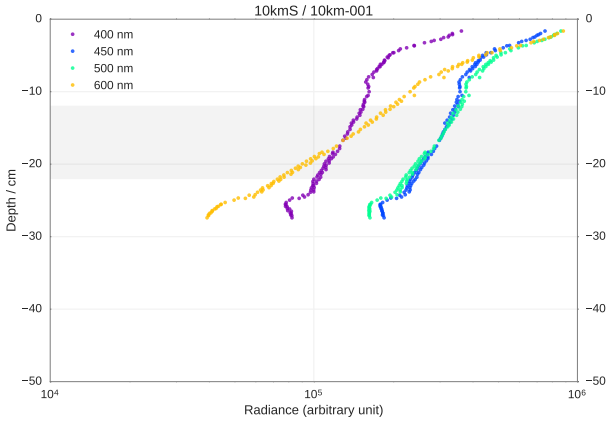
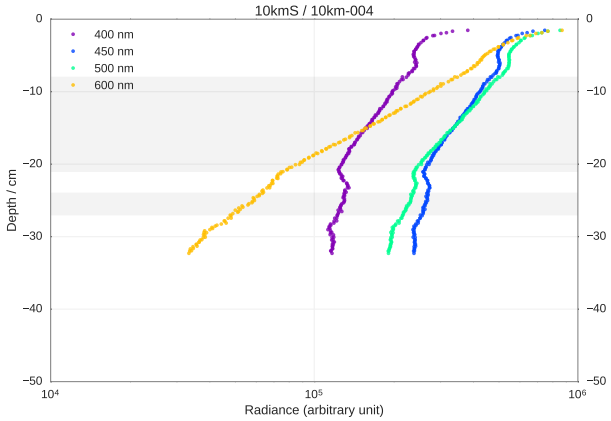
450 nm
500 nm
600 nm
Depth / cm
Radiance (arbitrary unit)

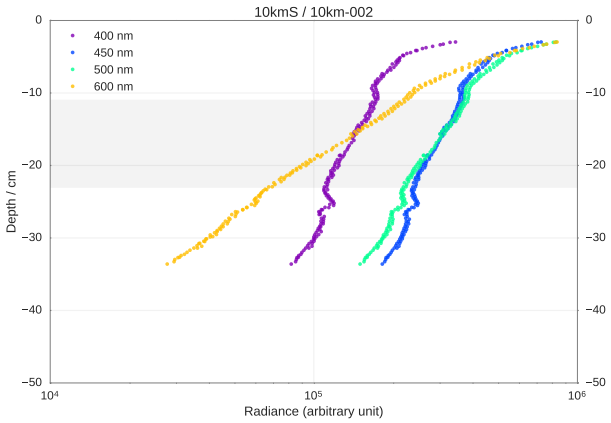

25kmN / 011
400 nm
450 nm
500 nm
600 nm
Depth / cm
Radiance (arbitrary unit)

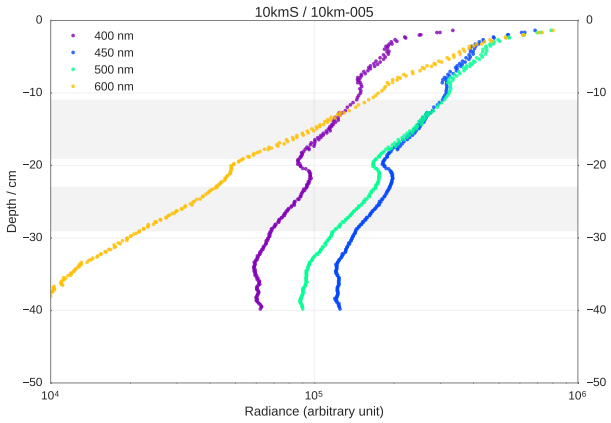

25kmN / 012
400 nm
450 nm
500 nm
600 nm
Depth / cm
Radiance (arbitrary unit)

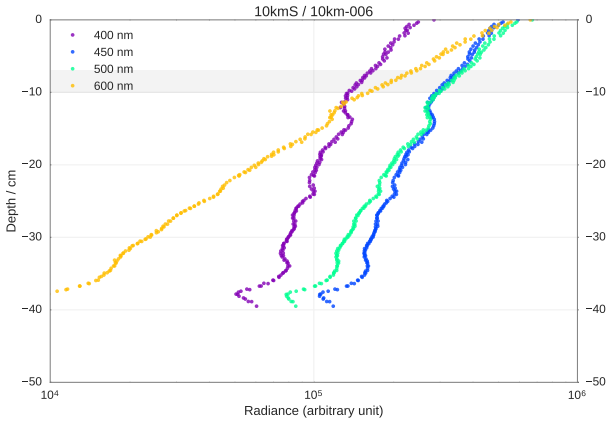

10kmS / 10km-003
400 nm
450 nm
500 nm
600 nm
Depth / cm
Radiance (arbitrary unit)

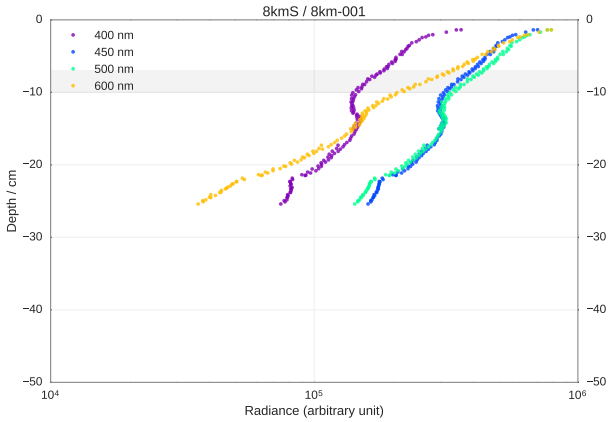

10kmS / 10km-001
400 nm
450 nm
500 nm
600 nm
Depth / cm
Radiance (arbitrary unit)

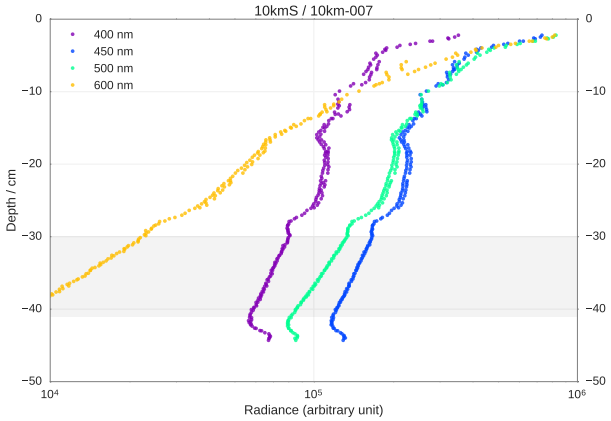

10kmS / 10km-004
400 nm
450 nm
500 nm
600 nm
Depth / cm
Radiance (arbitrary unit)

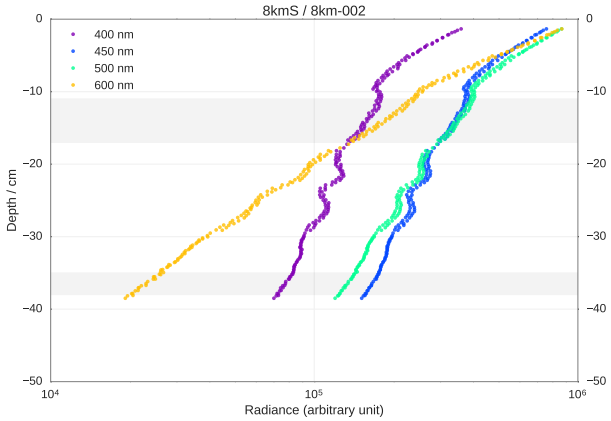

10kmS / 10km-002
400 nm
450 nm
500 nm
600 nm
Depth / cm
Radiance (arbitrary unit)

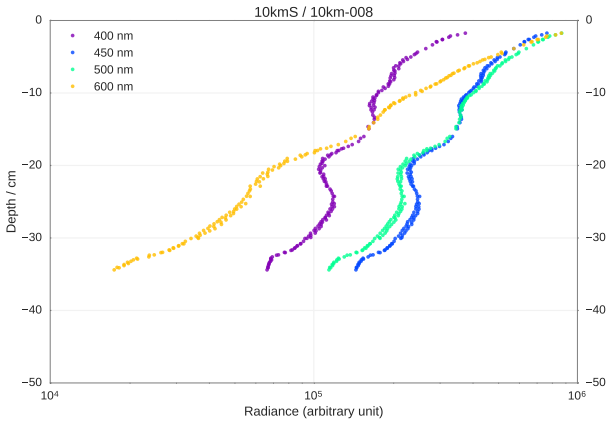

10kmS / 10km-005
400 nm
450 nm
500 nm
600 nm
Depth / cm
Radiance (arbitrary unit)

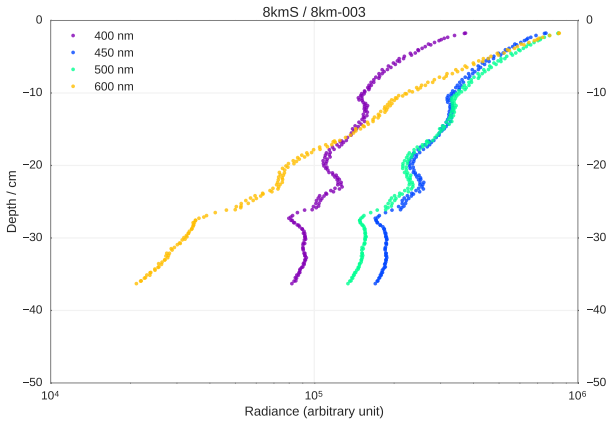

10kmS / 10km-006
400 nm
450 nm
500 nm
600 nm
Depth / cm
Radiance (arbitrary unit)

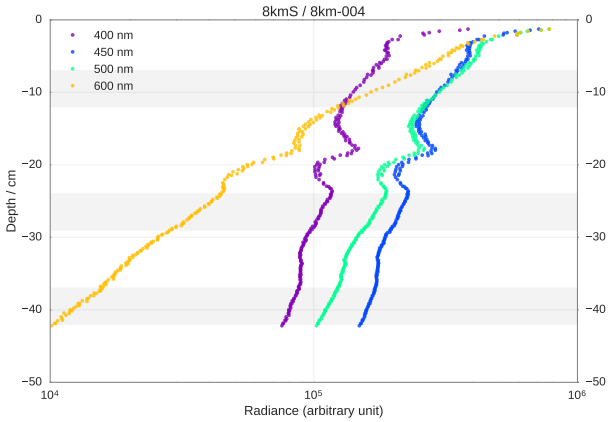

8kmS / 8km-001
400 nm
450 nm
500 nm
600 nm
Depth / cm
Radiance (arbitrary unit)

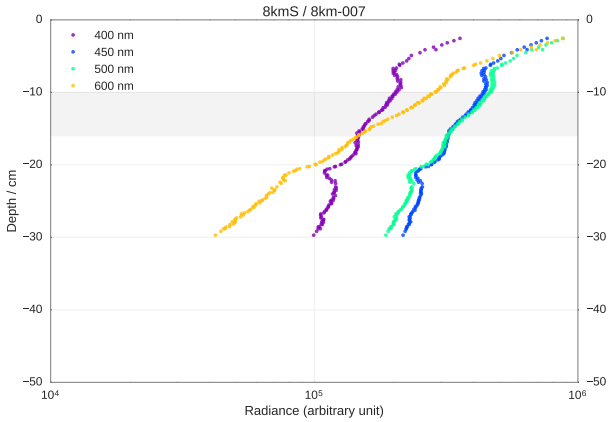

10kmS / 10km-007
400 nm
450 nm
500 nm
600 nm
Depth / cm
Radiance (arbitrary unit)

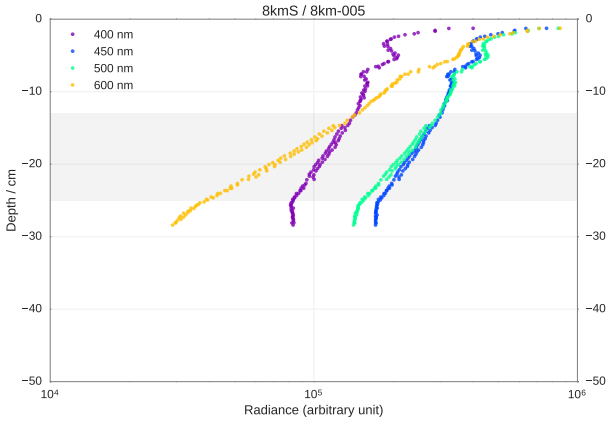

8kmS / 8km-002
400 nm
450 nm
500 nm
600 nm
Depth / cm
Radiance (arbitrary unit)

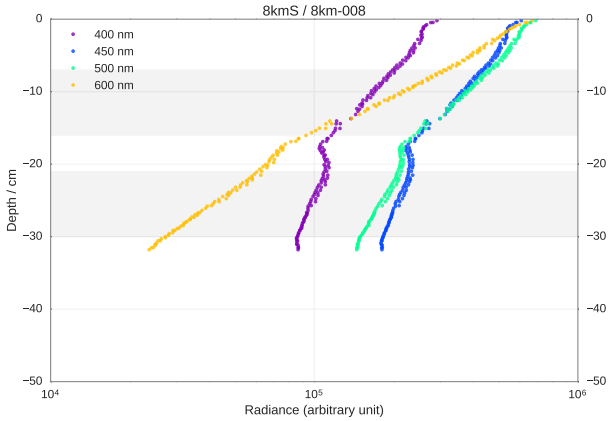

10kmS / 10km-008
400 nm
450 nm
500 nm
600 nm
Depth / cm
Radiance (arbitrary unit)

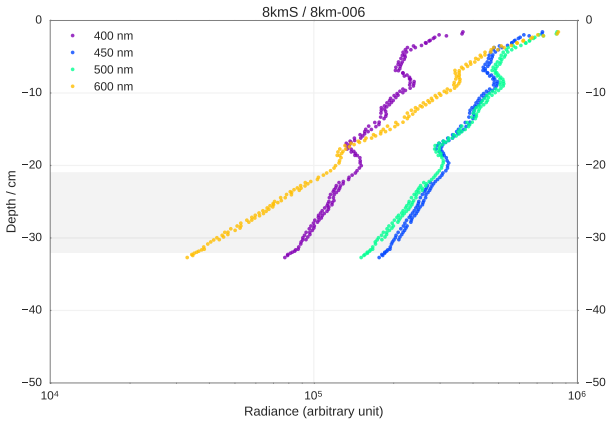

8kmS / 8km-003
400 nm
450 nm
500 nm
600 nm
Depth / cm
Radiance (arbitrary unit)

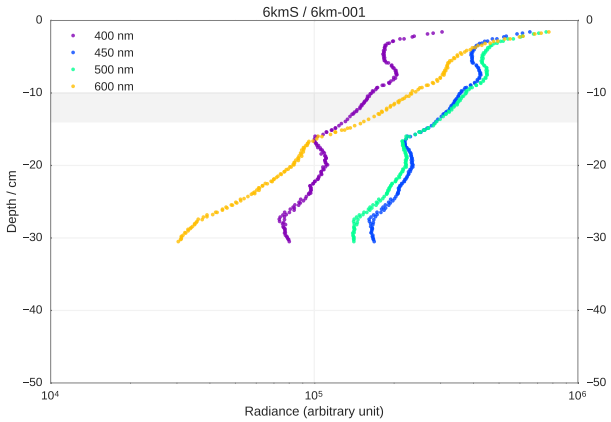

8kmS / 8km-004
400 nm
450 nm
500 nm
600 nm
Depth / cm
Radiance (arbitrary unit)

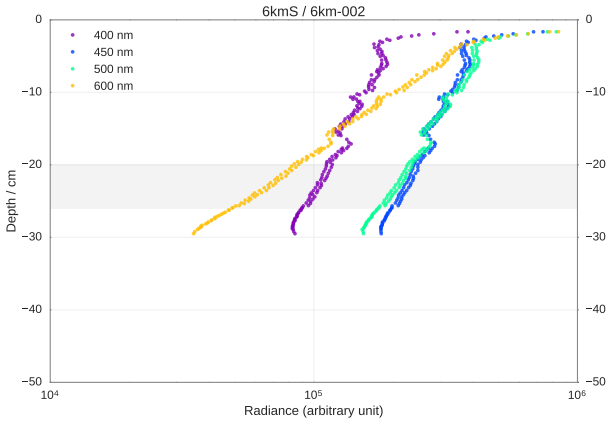

8kmS / 8km-007
400 nm
450 nm
500 nm
600 nm
Depth / cm
Radiance (arbitrary unit)

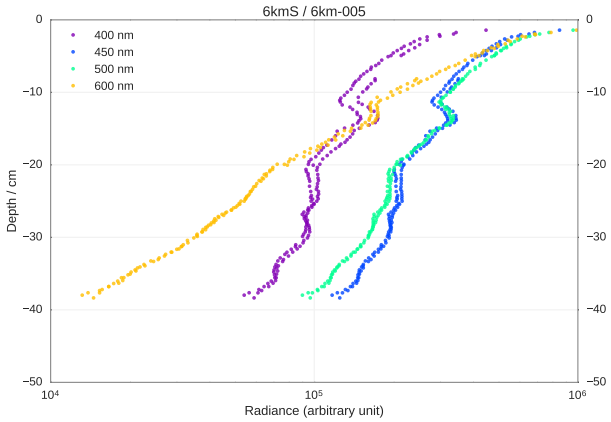

8kmS / 8km-005
400 nm
450 nm
500 nm
600 nm
Depth / cm
Radiance (arbitrary unit)

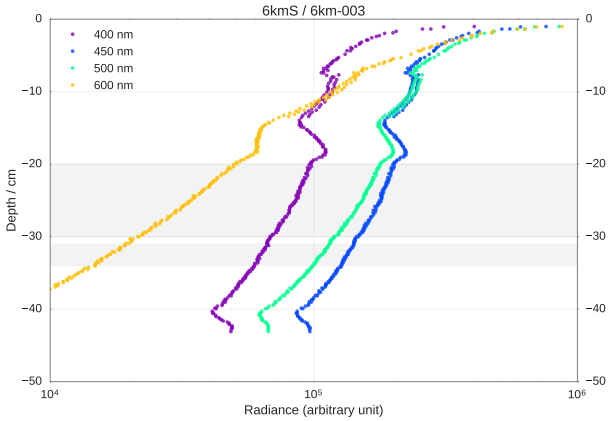

8kmS / 8km-008
400 nm
450 nm
500 nm
600 nm
Depth / cm
Radiance (arbitrary unit)

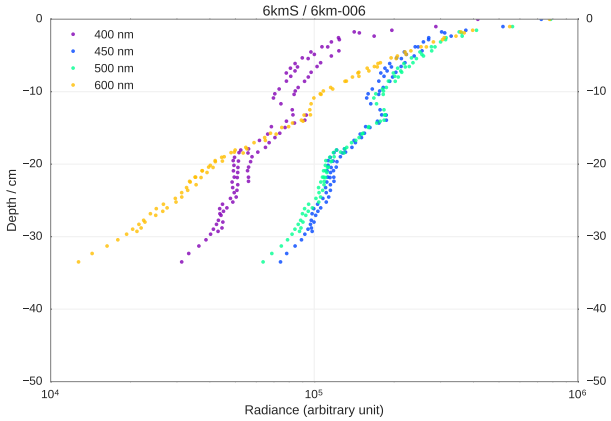

8kmS / 8km-006
400 nm
450 nm
500 nm
600 nm
Depth / cm
Radiance (arbitrary unit)

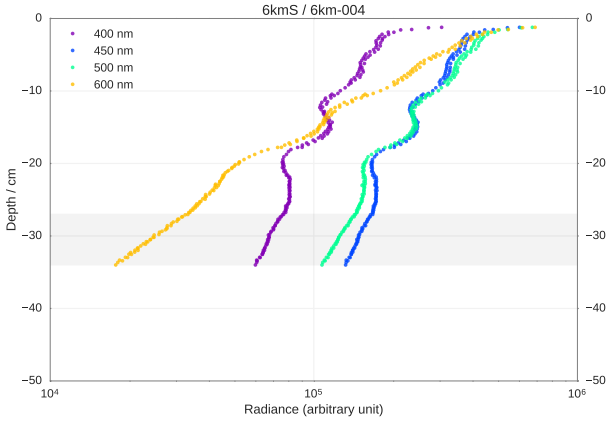

6kmS / 6km-001
400 nm
450 nm
500 nm
600 nm
Depth / cm
Radiance (arbitrary unit)

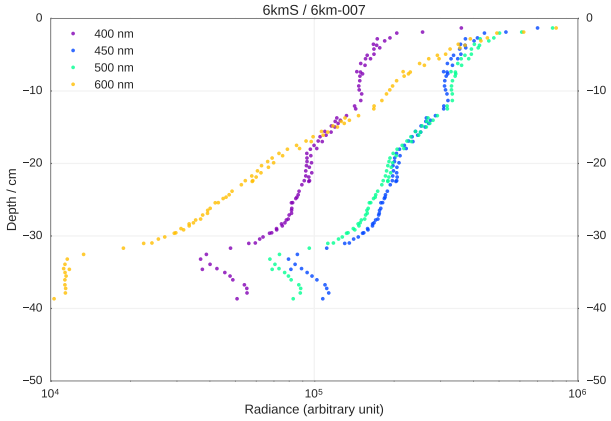

6kmS / 6km-002
400 nm
450 nm
500 nm
600 nm
Depth / cm
Radiance (arbitrary unit)

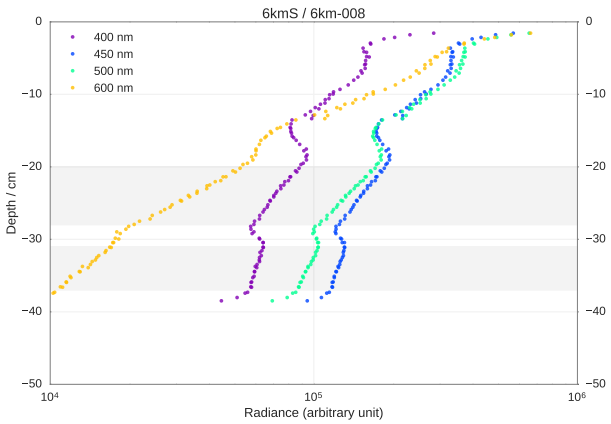

6kmS / 6km-005
400 nm
450 nm
500 nm
600 nm
Depth / cm
Radiance (arbitrary unit)

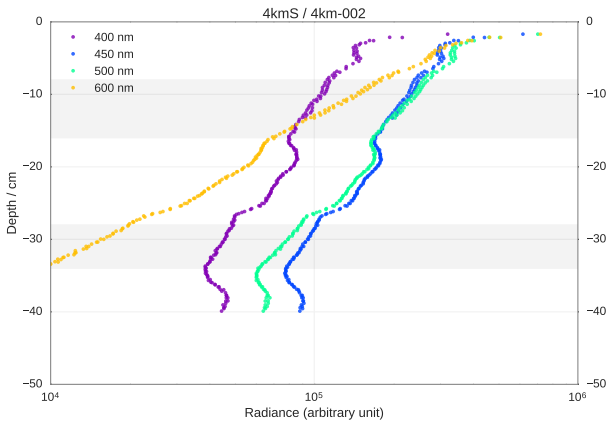

6kmS / 6km-003
400 nm
450 nm
500 nm
600 nm
Depth / cm
Radiance (arbitrary unit)

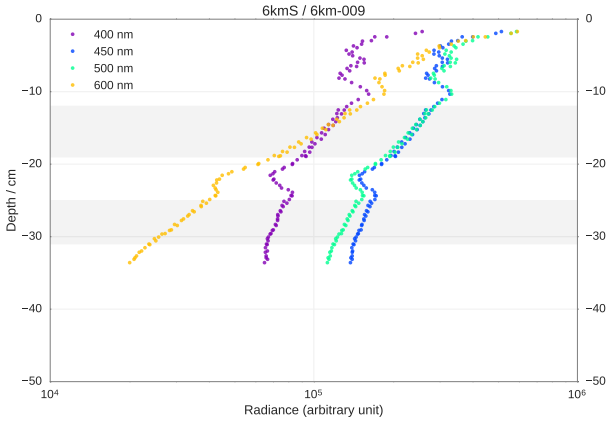

6kmS / 6km-006
400 nm
450 nm
500 nm
600 nm
Depth / cm
Radiance (arbitrary unit)

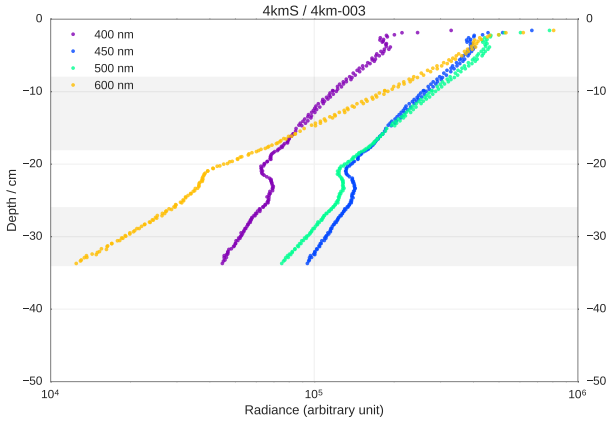

6kmS / 6km-004
400 nm
450 nm
500 nm
600 nm
Depth / cm
Radiance (arbitrary unit)

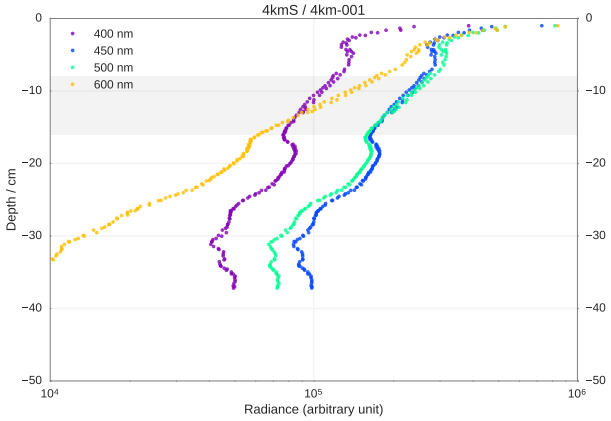

6kmS / 6km-007
400 nm
450 nm
500 nm
600 nm
Depth / cm
Radiance (arbitrary unit)

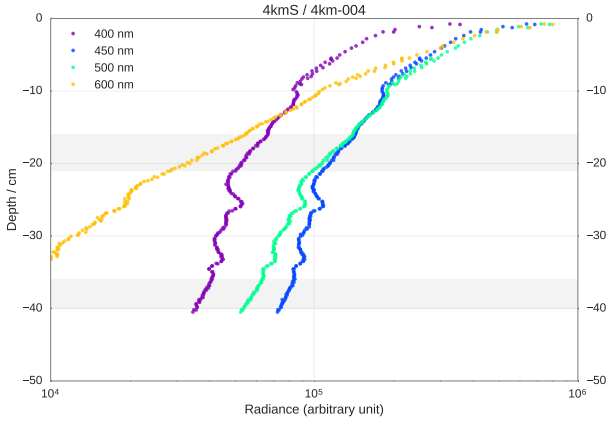

6kmS / 6km-008
400 nm
450 nm
500 nm
600 nm
Depth / cm
Radiance (arbitrary unit)

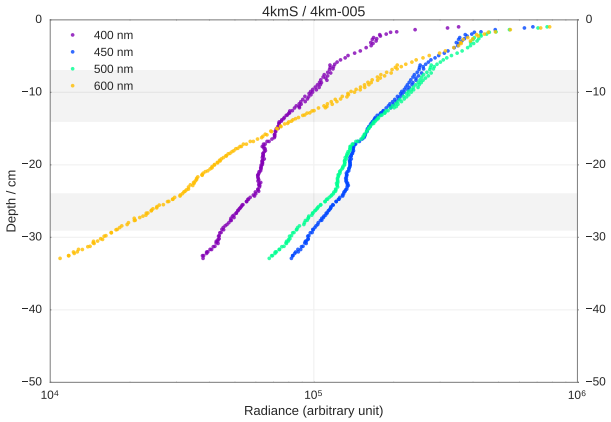

4kmS / 4km-002
400 nm
450 nm
500 nm
600 nm
Depth / cm
Radiance (arbitrary unit)

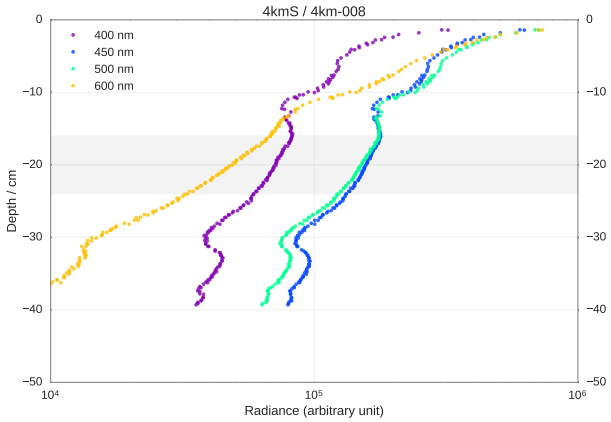

6kmS / 6km-009
400 nm
450 nm
500 nm
600 nm
Depth / cm
Radiance (arbitrary unit)

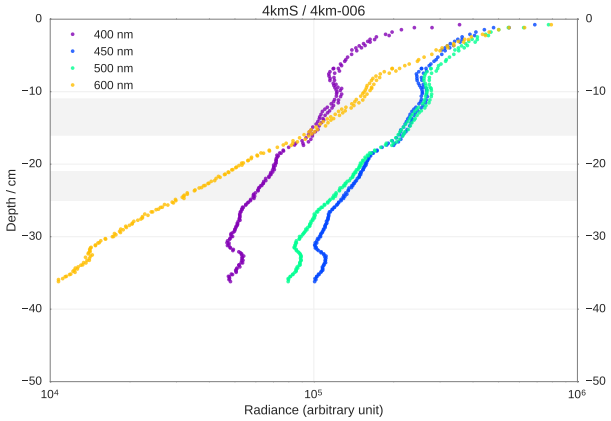

4kmS / 4km-003
400 nm
450 nm
500 nm
600 nm
Depth / cm
Radiance (arbitrary unit)

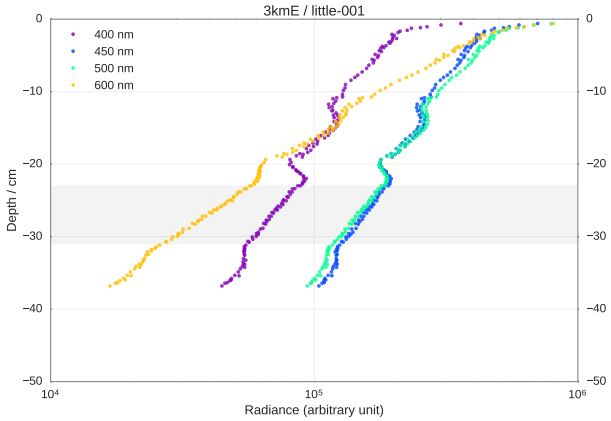

4kmS / 4km-001
400 nm
450 nm
500 nm
600 nm
Depth / cm
Radiance (arbitrary unit)

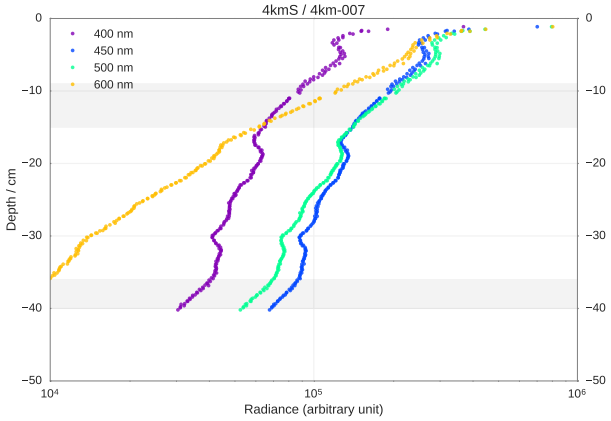

4kmS / 4km-004
400 nm
450 nm
500 nm
600 nm
Depth / cm
Radiance (arbitrary unit)

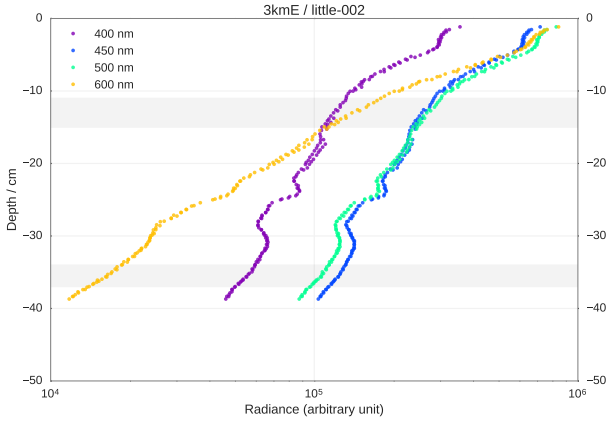

4kmS / 4km-005
400 nm
450 nm
500 nm
600 nm
Depth / cm
Radiance (arbitrary unit)

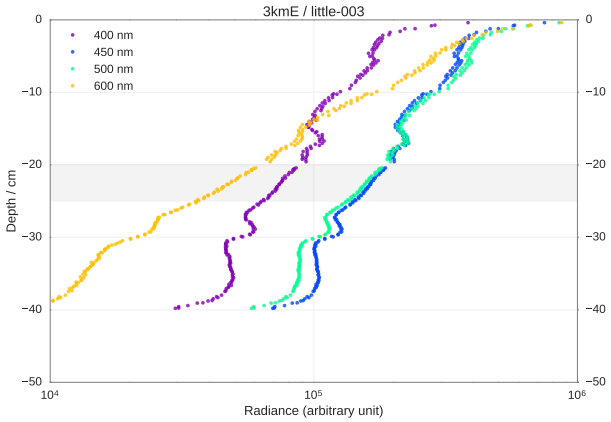

4kmS / 4km-008
400 nm
450 nm
500 nm
600 nm
Depth / cm
Radiance (arbitrary unit)

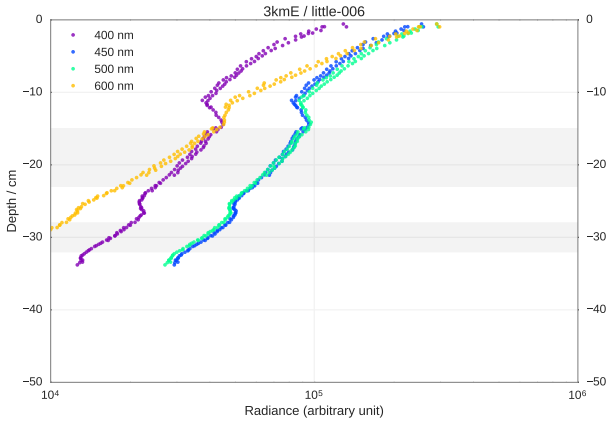

4kmS / 4km-006
400 nm
450 nm
500 nm
600 nm
Depth / cm
Radiance (arbitrary unit)

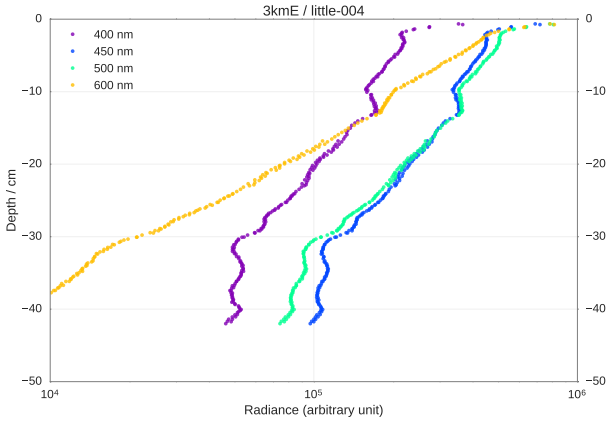

3kmE / little-001
400 nm
450 nm
500 nm
600 nm
Depth / cm
Radiance (arbitrary unit)

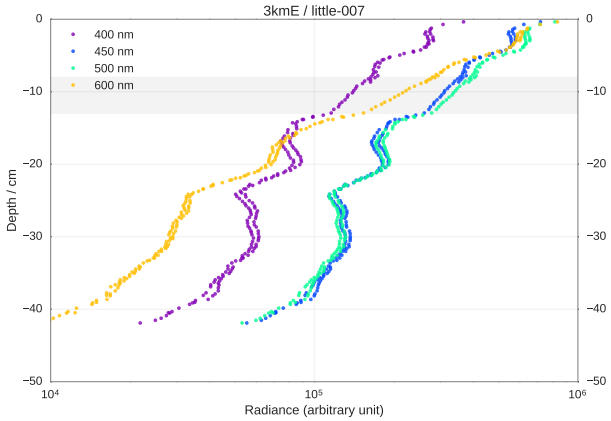

4kmS / 4km-007
400 nm
450 nm
500 nm
600 nm
Depth / cm
Radiance (arbitrary unit)

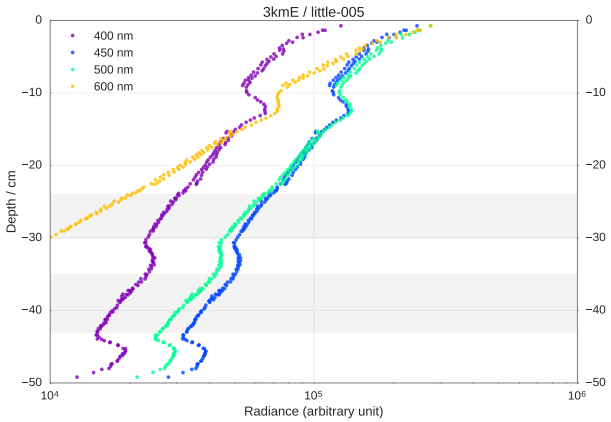

3kmE / little-002
400 nm
450 nm
500 nm
600 nm
Depth / cm
Radiance (arbitrary unit)


3kmE / little-003
400 nm
450 nm
500 nm
600 nm
Depth / cm
Radiance (arbitrary unit)


3kmE / little-006
400 nm
450 nm
500 nm
600 nm
Depth / cm
Radiance (arbitrary unit)


3kmE / little-004
400 nm
450 nm
500 nm
600 nm
Depth / cm
Radiance (arbitrary unit)


3kmE / little-007
400 nm
450 nm
500 nm
600 nm
Depth / cm
Radiance (arbitrary unit)


3kmE / little-005
400 nm
450 nm
500 nm
600 nm
Depth / cm
Radiance (arbitrary unit)

2 Ice absorption coefficients

Ice absorption estimate using the sites at 6, 8, 10 and 25 km in the South, East and West direction from Concordia. These data as well as refractive index are available for download from `http://lgge.osug.fr/~picard/ice_absorption/`

Wavelength nm	Ice absorption coefficient m^{-1}	Ice absorption uncertainty m^{-1}	Wavelength nm	Ice absorption coefficient m^{-1}	Ice absorption uncertainty m^{-1}
350	0.02510	0.00084	480	0.02479	0.00084
355	0.02400	0.00081	485	0.02614	0.00088
360	0.02317	0.00077	490	0.02767	0.00092
365	0.02256	0.00077	495	0.02943	0.00099
370	0.02200	0.00074	500	0.03131	0.00105
375	0.02144	0.00071	505	0.03346	0.00114
380	0.02123	0.00074	510	0.03590	0.00118
385	0.02049	0.00070	515	0.03819	0.00127
390	0.02043	0.00070	520	0.04098	0.00135
395	0.01960	0.00066	525	0.04388	0.00148
400	0.01971	0.00067	530	0.04708	0.00156
405	0.01881	0.00065	535	0.05067	0.00166
410	0.01793	0.00060	540	0.05462	0.00179
415	0.01731	0.00059	545	0.05916	0.00195
420	0.01725	0.00060	550	0.06399	0.00209
425	0.01734	0.00061	555	0.06936	0.00227
430	0.01745	0.00059	560	0.07509	0.00242
435	0.01790	0.00061	565	0.08106	0.00270
440	0.01820	0.00064	570	0.08730	0.00289
445	0.01867	0.00063	575	0.09402	0.00309
450	0.01926	0.00065	580	0.10079	0.00332
455	0.01985	0.00070	585	0.10832	0.00357
460	0.02054	0.00071	590	0.11664	0.00384
465	0.02135	0.00072	595	0.12605	0.00412
470	0.02246	0.00076	600	0.13597	0.00441
475	0.02360	0.00079			