**Metadata S5**

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Exploring controls on the timing of the phytoplankton bloom in western Baffin Bay, Canadian Arctic

Elementa: Science of the Anthropocene

* Description of:

**Data S5: Forcing fields for light.**

The forcing fields are given for the location of the Qikiqtarjuaq sea ice camp (67.4797°N, -63.7895°E) for 2016. Each binary file contains 365 values each consisting in a four-bytes float in big-endian. The units of the values are μmol photons m-2 s-1. The 365 values correspond to the 365 days of a year. The files were generated with gud\_1d\_35+16/input\_noradtrans/input/process\_data\_gud\_par.ipynb.

* Files:
  + 1D\_GDPS\_PAR\_y2016.365.32bits.bin: Forcing field for photosynthetically active radiation (PAR) irradiance just below open water (Iw). It was calculated from the model output of CGRF (Smith et al., 2014, https:doi.org/10.1002/qj.2194).
  + 1D\_obs\_PARice\_EXP0\_y2016.365.32bits.bin: Forcing field for photosynthetically active radiation (PAR) irradiance just below sea ice (Ii) for the reference simulation (EXP-0). It was calculated from observations at the Qikiqtarjuaq sea ice camp in 2016 (Massicotte et al., 2019, https://doi.org/[10.17882/59892](https://doi.org/10.17882/59892)).
  + 1D\_obs\_PARice\_EXP1\_1\_1\_y2016.365.32bits.bin: Forcing field for photosynthetically active radiation (PAR) irradiance just below sea ice (Ii) for the simulation with opaque snow but translucent bare ice (EXP-2.1). It was calculated from observations at the Qikiqtarjuaq sea ice camp in 2016 (Massicotte et al., 2019, https://doi.org/[10.17882/59892](https://doi.org/10.17882/59892)).
  + 1D\_obs\_PARice\_EXP1\_1\_2\_y2016.365.32bits.bin: Forcing field for photosynthetically active radiation (PAR) irradiance just below sea ice (Ii) for the simulation with opaque snow and opaque bare ice (EXP-2.2). It was calculated from observations at the Qikiqtarjuaq sea ice camp in 2016 (Massicotte et al., 2019, https://doi.org/[10.17882/59892](https://doi.org/10.17882/59892)).