**Supporting Fig 1. Representative example of measurements of photosynthesis rates and non-photochemical quenching (NPQ).** In a) oxygen-based net photosynthesis rates (PO; µmol O2 [mg Chl*a*]-1 h-1) as function of irradiance in *Chaetoceros* sp. (filled triangles) and *Phaeocystis antarctica* (strain 109; filled circles) grown at 4°C and 35 PSU are depicted. Dotted lines show the fitted photosynthesis-irradiance curves of *Chaetoceros* sp. and *P. antarctica*, respectively. In b) the fluorescence-based gross photosynthesis rates (PF; µmol O2 [mg Chl*a*]-1 h-1) as function of irradiance in *Chaetoceros* sp. and *P. antarctica* are depicted. c) Light-dependent increase of non-photochemical quenching (NPQ; [Fm-Fm’]/Fm’) in *Chaetoceros* sp. and *P. antarctica.*

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