Measurements of phytoplankton pigments with HPLC in the Phytooptics lab, since 2007

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- the data collected from 2008 to 2009 were measured by Erika Allhusen and Bettina Taylor from our group
- the data collected from 2010 to 2012 were measured by Sonja Wiegmann and Bettina Taylor from our group
- the data collected from 2013 were measured by Sonja Wiegmann only.

Water was filtered through GF/F filters which were stored at -80 °C until analysis back in the Alfred-Wegerner-Institute for Polar and Marine Resaerch (AWI) after shock-freezing in liquid nitrogen. Pigments listed in Table 1 of Taylor et al. (2011) were analyzed using a High Performance Liquid Chromatography (HPLC) technique according to Barlow et al. (1997) and adjusted to our instrument: Pigment extracts were separated on a Waters HPLC system equipped with an autosampler (717 plus), pump (600) photo-diode array (2996), a fluorescence detector (2475) and EMPOWER software. For analytical preparation, 50µl internal standard (canthaxanthin) and 1.5 mL acetone were added to each filter sample and then homogenized for 20 s in a Precellys© tissue homogenizer. After centrifugation, the supernatant liquid was filtered through a 0.2 µm polytetra-fluoroethylene (PTFE) filter (Rotilabo) and placed in centrifuge tubes (Eppendorf, Germany). An aliquot (100 µl) was transferred to the autosampler (4°C). Just prior to analysis, the sample was premixed with 1 M ammonium acetate solution in the ratio 1:1 (v/v) in the autosampler and injected onto the HPLC system. The pigments were analyzed by reverse-phase HPLC, using a VARIAN Microsorb-MV3 C8 column (4.6 X 100 mm) and HPLC-grade solvents (Merck, Germany). Solvent A consisted of 70 % methanol and 30 % 1 mol l^{-1} ammonium acetate and solvent B contained 100 % methanol. The gradient was modified after Barlow et al. (1997). Eluting pigments were detected by absorbance (440 nm). We determined the list of pigments shown in **Fehler! Verweisquelle konnte nicht gefunden werden.** of Taylor et al. (2011) and applied the method of Aiken et al. (2009) for quality control of the pigment data. Total chlorophyll a (TChl *a*) concentrations were calculated from the sum of the pigment concentrations of monovinyl Chl *a*, divinyl Chl *a* and chlorophyllide *a*.

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