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Tuesday, October 9

Poster Session 2

10:30–12:30

Poster 182

PROTOCOLS FOR PROCESSING AND MEASURING PARTICULATE ORGANIC CARBON (POC) SAMPLES: ASSESSING THE EFFICIENCY OF ACIDIFICATION METHODS USED TO REMOVE THE INORGANIC FRACTION OF PARTICULATE CARBON SAMPLES COLLECTED ON GLASS FIBER FILTERS

Total Particulate Carbon (PC) is comprised of particle organic carbon (POC) and particulate inorganic carbon (PIC). The accurate determination of the contributions of each is integral to studies of biogeochemistry and carbon cycling in natural waters. Removal of inorganic carbon so that the remaining organic material can be measured is typically carried out by acidification techniques. Previous round robin studies have shown that PC measured at several different laboratories can agree to within a few percent. However, when the same labs attempted to measure POC, the agreement significantly decreased. This is likely due to fundamental differences in methodology, which may cause errors due to incomplete removal of inorganic carbon that is subsequently measured as part of the organic fraction. Alternatively, the acidification process may remove some of the organic carbon through volatilization or other processes before analysis. Dissolved inorganic carbon (DIC) and dissolved organic carbon (DOC) adsorbed onto the filters can also contribute to errors in PC and POC measurements. Current POC algorithms use empirical relationships between POC concentration and optical measurements, such as Remote sensing reflectance (R_{rs}), to estimate surface POC distributions. Therefore, it is essential to have accurate laboratory measurements of PC and its constituents. This study used cultures of coccolith forming *Emiliania huxleyi* and other non-lith forming cultures to test and compare different acidification methods and sample processing procedures.

Michael Novak, NASA/Goddard Space Flight Center, michael.novak@nasa.gov, <https://orcid.org/0000-0001-7687-2938>

Antonio Mannino, NASA Goddard Space Flight Center, antonio.mannino@nasa.gov

Ivona Cetinić, NASA Goddard Space Flight Center, ivona.cetinic@nasa.gov, <https://orcid.org/0000-0002-1363-3136>

Joaquin E. Chaves, NASA Goddard Space Flight Center, joaquin.e.chavescedeno@nasa.gov