Supplementary Material

Ocean liming effects on dissolved organic matter dynamics

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Standard Hydrated lime range	EU representative Product
Chemical purity (CaO) in %	-
Equivalent $Ca(OH)_2$ %	91-95
Particle size distribution and average diameter d50 (µm)	10-16
Specific surface area (m^2/g)	15-23
Bulk density (Kg/m^3)	600

Table S1: High-purity calcium hydroxide was used for the experiment. Product specification by UniCalce (2021)
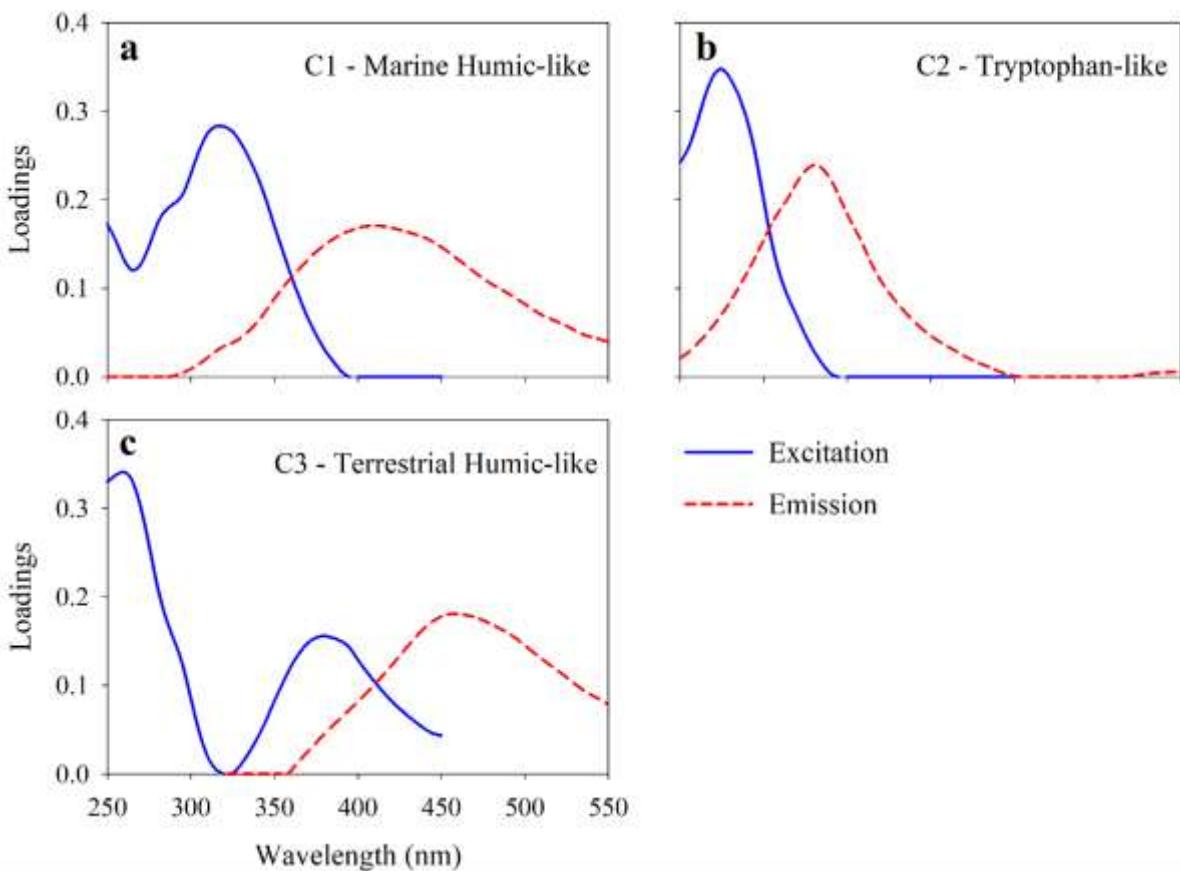
Figure S1 –Excitation and Emission spectra of the 3 components validated by the PARAFAC analysis applied to the 63 EEMs from the experiment with Mediterranean Sea water.

Components	λex peak (nm)	λem peak (nm)	Idetification	Similar components
C1_{Mh-Med}	315	409	Marine humic-like	Pitta and Zeri (2021) Chen et al. (2016) Gao and Guéguen (2018) Gao and Guéguen (2017) Kida et al. (2019) Dainard and Guéguen (2013) Lei et al. (2021)
C2_{Trp-Med}	275	331	Tryptophane-like	Cawley et al. (2012a) Wünsch and Murphy (2021) Yamashita et al. (2021) Cawley et al. (2012b) Shutova et al. (2014)
C3_{Th-Med}	260	[380] 456	Terrestrial humic-like	Pitta and Zeri (2021) Gonçalves-Araujo et al. (2015) Dainard and Guéguen (2013)

Table S2. Characterization of the PARAFAC components validated for the MedSea. The comparison with the components in the literature was carried out by using the Openfluor database.
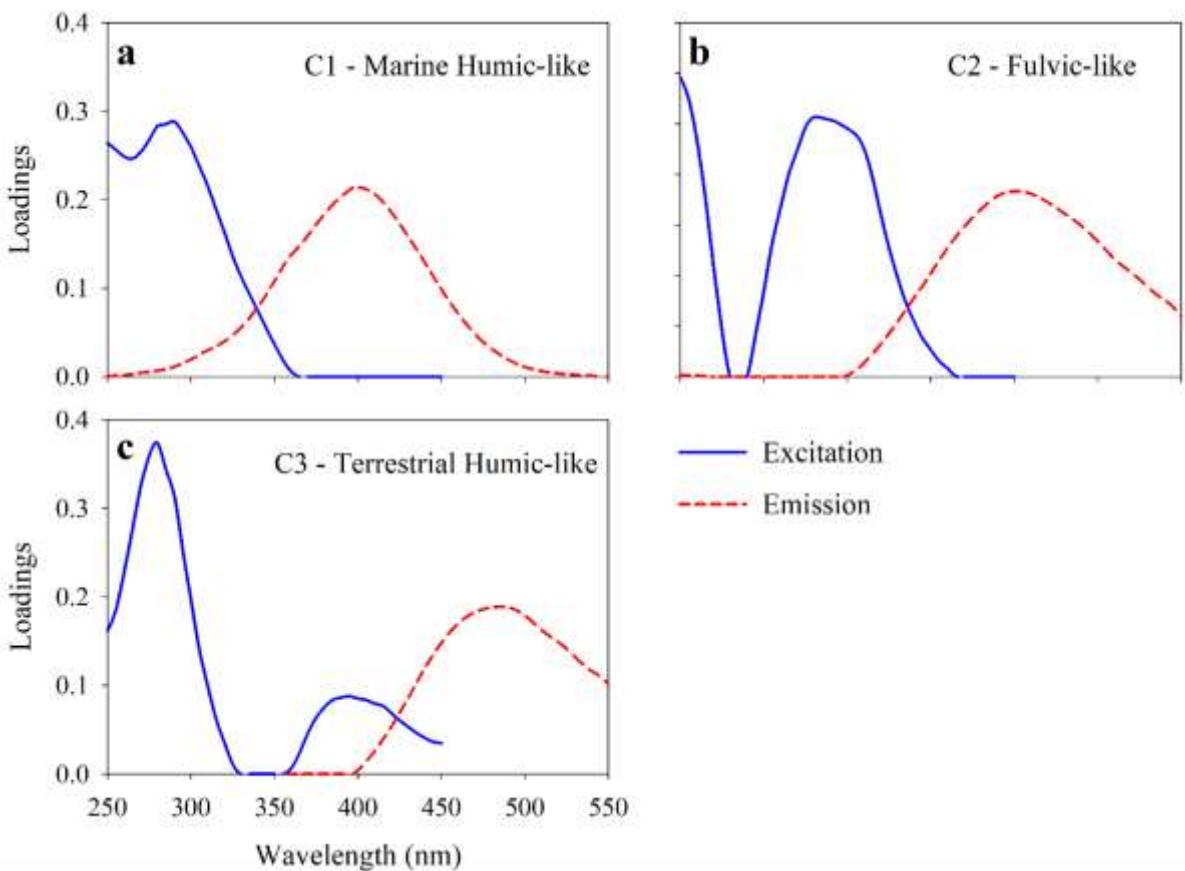
Figure S2. Excitation and Emission spectra of the 3 components validated by the PARAFAC analysis applied to the 50 EEMs from the experiment with Baltic Sea water.

Components	λex peak (nm)	λem peak (nm)	Idetification	Similar components
C1Mh-Med	290	400	Marine humic-like	Wünsch et al. (2015) Wauthy et al. (2018) Retelletti Brogi et al. (2022) Yu et al. (2015) Guéguen et al. (2015) Lapierre and Del Giorgio (2014)
C2Trp-Med	330	452	Fulvic-like	Kothawala et al. (2014) Andersson et al. (2018)
C3Th-Med	280	485	Terrestrial humic-like	Andersson et al. (2018)

Table S3. Characterization of the PARAFAC components validated for the BalSea. The comparison with the components in the literature was carried out by using the Openfluor database.

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