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Seasonal variations of size-resolved biogenic marine organic aerosols at Amsterdam Island in the Austral Ocean

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A continuous record of the chemical composition of size-segregated marine aerosols has been performed for almost 2 years (03/2006-12/2007) at the WMO-GAW global station of Amsterdam Island in the Southern Indian Ocean. Aerosols were collected on a weekly basis in the size fractions (PM₁₀, PM_{2.5}, PM₁) and analyzed for their chemical composition (PM, ions, OC, EC, WSOC). Further evidences were brought on the role of marine organic aerosols of biogenic origin with a clear maximum observed during summertime for submicron organic aerosols, in phase with chlorophyll-a concentrations recorded in the upwind regions surrounding Amsterdam Isl.. The parameterization of submicron marine WIOC concentration (as a percentage of seasalt concentration) proposed by O'dowd et al. (GRL, 2008) is tested here with our dataset in order to further conclude for other oceanic regions on the potential climatic role of biogenic marine organic aerosols.