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## The influence of organic compounds on the development of precipitation acidity in maritime clouds

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**Abstract.** In order to estimate the anthropogenic influence of gas and aerosol emissions from the Petroleum Industry in maritime zones with clouds of small vertical extent, a numerical 1-D Eulerian cloud-chemical model with detailed microphysics (Alfonso and Raga, 2002) is used to simulate the influence of water soluble organic compounds (WSOC) and organic+inorganic gas emissions on cloud development. Following Mircea et al. (2002), we tested the sensitivity of the cloud and precipitation development in the classical inorganic case (CIC) and the inorganic+organic case (IOC) with respect to CCN compositions. The results indicate an increase in the droplet concentration for the IOC, and a delay in the development of precipitation.

The pH spectral evolution was studied during both the development and precipitation stages. The influence of the diffusion of formic acid and its generation by oxidation of hydrated formaldehyde in the aqueous phase result in a reduction in the pH of precipitation in the range between 0.05 and 0.15 pH units (from 1 to 3%) for the high ambient SO<sub>2</sub> concentration (20 ppb) and between 0.2-0.5 pH units (from 4 to 10%) for the low ambient SO<sub>2</sub> concentration (1 ppb) case.

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