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The polar iodine paradox

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Ozone has long been a research focal point in climate science as it protects life from extreme UV radiation in the upper part of the Earth's atmosphere (Stratosphere) and acts as a greenhouse gas, oxidant, and air pollutant in Earth's lower atmosphere (troposphere). Whereas iodine is a dominant player in destroying ozone over coastal Antarctic sea-ice, it has not been shown to have that effect over Arctic sea-ice. In this work, we discuss the different reasons by which the influence of iodine is so different in Antarctica compared to the Artic. These are mainly related to the largest algal population contained within and underneath Antarctic sea-ice, which in turn are the main source of atmospheric iodine in Antarctica, and the larger sea-ice thickness in the Arctic, which prevent the biologically produced iodine to be release to the atmosphere