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Modeling of gas phase halogen chemistry over Antarctic sea ice

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Satellite and ground-based observations have shown that elevated concentrations of halogen oxides occur over the Antarctic sea ice areas. Different mechanisms have been suggested to account for the catalytic release and cycling of bromine and chlorine species on ice surfaces. We have developed an atmospheric model to explore the interactions between ice surfaces and the gas phase halogen chemistry of the Antarctic boundary layer. The model is used to assess the impact of bromine and chlorine chemistry upon boundary layer O_3, NO_x (NO and NO_2) and HO_x (OH and HO_2) chemistry.