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Recent measurements of ClO and BrO in the Beaufort Sea, using a flow tube reactor technique

P. Tackett (1), P. B. Shepson (1), J. W. Bottenheim (2), and S. V. Nghiem (3)

(1) Purdue University, Purdue Climate Change Research Center, West Lafayette, United States (pshepson@purdue.edu, 765 496 2874), (2) Environment Canada, Toronto, Ontario, Canada, (3) Jet Propulsion Laboratory, California Institute of Technology, Pasadena, California, USA

We have recently developed a flow tube chemical reactor method that converts BrO and ClO radicals to stable halogenated products that are detected with Ĩ ppt limits of detection, using gas chromatography and electron-capture detection (GC/ECD). We utilize this technique in two environments - above the sea ice on the eastern Beaufort Sea in the spring of 2008 from the icebreaker Amundsen, and above the snowpack at Barrow Alaska, as part of OASIS2009. Here we focus on the conditions that lead to initiation of the halogen atom chain reaction that occurs in springtime in the Arctic Ocean region, leading to depletion of ozone and mercury. Together with satellite measurements of regional sea ice, the observational data will be related to environmental conditions, and the physical and chemical conditions of the surface.