

# Long-term atmospheric mercury measurements on Amsterdam Island in the French Southern and Antarctic Lands

LÉA COLLIGNON<sup>1</sup>, HÉLÈNE ANGOT<sup>1</sup>, OLIVIER MAGAND<sup>1</sup>, YANN BERTRAND<sup>1</sup>, SOLÈNE DUPERRAY<sup>1</sup>, LAURE LAFFONT<sup>2</sup>, JEROEN E SONKE<sup>2</sup> AND AURÉLIEN DOMMERGUE<sup>3</sup>

<sup>1</sup>IGE, CNRS, Univ. Grenoble Alpes

<sup>2</sup>CNRS/Université de Toulouse

<sup>3</sup>Univ. Grenoble Alpes, IGE

Presenting Author: [lea.collignon@etu.univ-lyon1.fr](mailto:lea.collignon@etu.univ-lyon1.fr)

The atmospheric reactivity and speciation of mercury is still poorly understood affecting our ability to trace the fate of mercury from sources to impacts, and hence to evaluate the effectiveness of the Minamata Convention. This lack of process understanding partly stems from the lack of robust measurements of divalent mercury species in ambient air. As part of long-term monitoring activities on Amsterdam Island in the French Southern and Antarctic Lands, we have deployed systems to collect and measure the different chemical forms of mercury in the atmosphere. Elemental mercury has been measured continuously and at a high frequency for more than 10 years, thus constituting one of the most important databases in the Southern Hemisphere. Divalent species have been automatically and continuously measured from 2012 to 2015 using a Tekran speciation unit, and passively and (bi)weekly since using cation exchange membranes. In addition to presenting this unique dataset, we discuss the pros and cons of the different techniques building on the knowledge and experience acquired through time.