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Iodine monoxide variations observed by shipborne MAX-DOAS over the tropical Pacific Ocean

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Iodine monoxide (IO) retrievals were performed by shipborne Multi-Axis Differential Optical Absorption Spectroscopy (MAX-DOAS) on the Japanese research vessel Mirai during two ocean cruises (Nov-Dec 2014 (MR14-06) and Nov-Dec 2015 (MR15-04)), to clarify the IO variations over the remote tropical ocean. IO differential slant column densities (DSCDs) for an elevation angle of 3° were $\sim 4 \times 1013$ molecules/cm2 during MR14- 06 and $\sim 2 \times 1013$ molecules/cm2 during MR15-04 on average, respectively, and clear latitudinal variations with their maxima in the tropics were observed. We investigate ozone variations observed on the vessel and found that clear negative collations with IO DSCD during both cruises over the tropical Pacific. This result suggests that IO plays an import role in tropospheric chemistry over the remote tropical ocean.