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IASI observations of hydrogen cyanide (HCN) over Indonesia during the 2015 El Niño event

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Although forest fires in Indonesia are a seasonal occurrence, largely due to the agricultural practice of slash and burn in which land is cleared for new planting by cutting back vegetation and setting it on fire, the 2015 fires were particularly severe due to it being an El-Niño year.

The land in Indonesia contains a lot of peat, which easily burns to emit hydrogen cyanide (HCN). Satellite limb instruments such as the Atmospheric Chemistry Experiment Fourier Transform Spectrometer (ACE-FTS) and Microwave Limb Sounder (MLS) have measured vertical profiles of HCN, revealing an unprecedented amount of HCN emitted from Southeast Asia during September–November 2015 and transported into the upper troposphere and lower stratosphere.

Here we present (nadir) observations of HCN total columns over the Indonesia region derived from Infrared Atmospheric Sounding Interferometer (IASI) measurements during September–November 2015. IASI observations of carbon monoxide (CO) using the University of Leicester IASI Retrieval Scheme (ULIRS) are used to calculate enhancement ratios of HCN relative to CO.