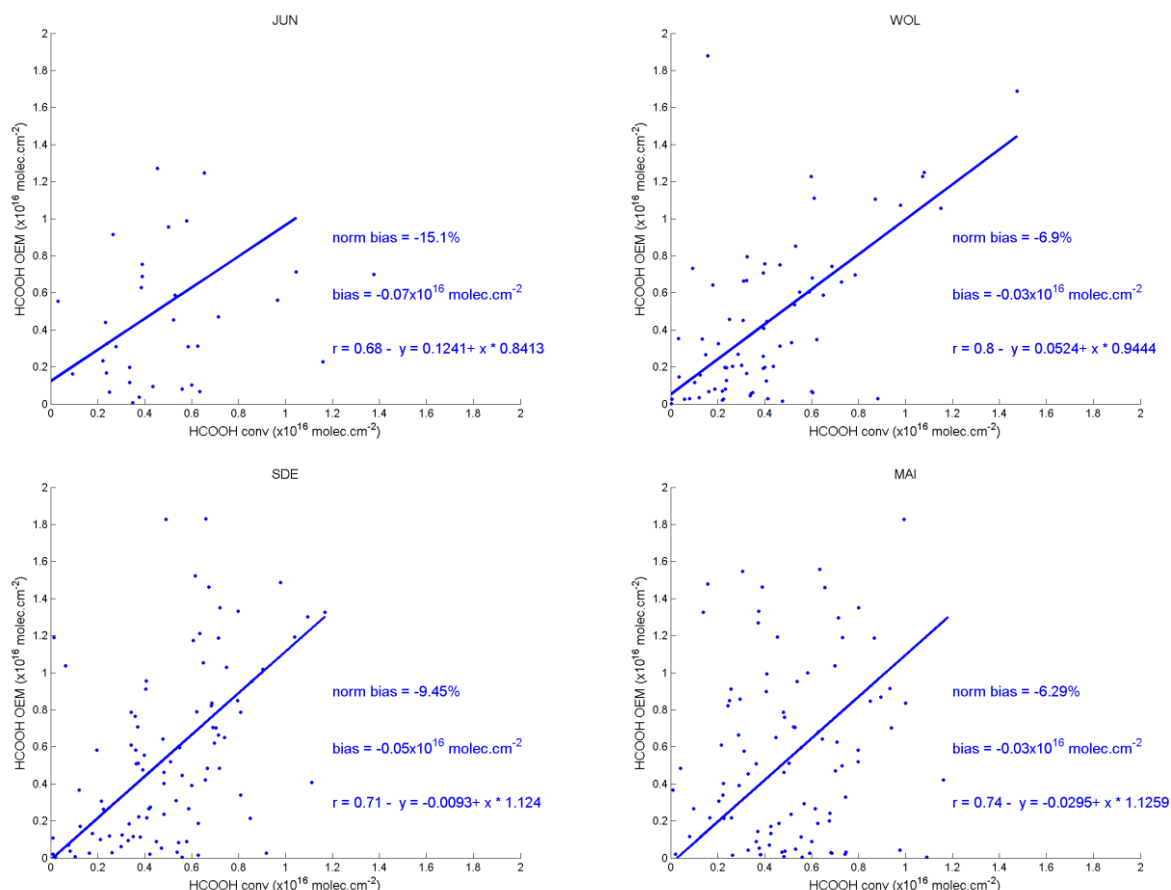


**Table S1** Mean bias in  $10^{16}$  molec./cm<sup>2</sup>, normalized mean bias in percent (in parentheses), between the daily FTIR measurements and the daily IASI co-located mean data, retrieved by OEM and between the daily FTIR measurements and the columns using the conversion factors. The IASI data were collocated within 0.5° of the site location. The number of coincidence days is given for each site. For this test, only the five first days of each month in 2009 were retrieved as done in the Section 2.3.2 retrieval approach.

	Saint-Denis (12 days)	Wollongong (13 days)	Jungfraujoch (10 days)
IASI column, OEM	0.31 (110.65%)	-0.04 (-13.11%)	-0.86 (-73.96%)
IASI column, converted	0.26 (91.72%)	-0.05 (-15.14%)	-0.8 (-69.24%)

**Figure S1.** Animation of the monthly HCOOH global distribution from 2008 to 2014, derived using the IASI radiance observations on a 1°×1° grid.



**Figure S2.** Scatterplot between the HCOOH columns retrieved by OEM (HCOOH OEM) and the corresponding columns calculated by the conversion factors (HCOOH conv). The IASI spectra were selected at  $\pm 0.5^\circ$  around each site location (JUN = Jungfraujoch, WOL = Wollongong, SDE = Saint-Denis, MAI = Maido). The mean bias, the normalized mean bias, and the correlation coefficient are reported. The blue line corresponds to the linear regression and the corresponding equation is also provided. For this test, only the five first days of each month in 2009 were retrieved.