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Title: The chemical composition of the SW Asia summer monsoonal jet as observed by repeated CARIBIC aircraft measurements

Abstract: Whereas the INDOEX campaign investigated the meteorological, chemical, and physical changes during the winter season under conditions of continental outflow, CARIBIC using a Boeing 767 has been repeatedly crossing the weak easterly jet (which passes south of the Himalayas), over the Arabian Sea and the Middle east, during the summer monsoon. Once the summer monsoon hits India, the profound change in weather/climate not only presumably changes the composition the continental pollution plume, but the accompanying change in circulation carries it within the reach of the fixed route of our passenger aircraft doing regular observations at a cruising altitude of about 11 km for 1997 - 2000. Most significant is the regular systematic increase in CH4 in this plume, although also CO seems to be enhanced. Altogether 8 flights document, at least for the years of this study, a systematic increase in CH4 between June and September. We will make a rough estimate of the amount of CH4, and discuss other tracers that may help us to understand the source region(s) of this large plume of continental emissions.

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