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Air quality over the Canadian oil sands as seen from space

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The oil sands in northern Alberta, Canada contain the second largest reserve of oil globally. However, only recently has extraction of the oil and sand mixture and its conversion into synthetic crude become economically viable. This energy intensive process generates significant emissions, including nitrogen and sulphur oxides, carbon monoxide, and particulate matter. As part of a larger effort by Environment Canada to better understand air quality in the region, a multi-satellite examination of trace gases and aerosols has been undertaken. This presentation will discuss the methodologies used to investigate this intense but spatially-small source as well as initial findings including high-resolution maps, recent trends, and satellite-derived emissions of some key pollutants. These results will be placed in a global context through comparisons with other point sources.