The Bureau of Ocean Energy Management (BOEM) agency is mandated to ensure oil and natural gas (ONG) emissions do not degrade the air quality of coastal states. Oil and natural gas operations emit nitrogen oxides (NO$_x$), which are major air pollutants and precursors to ground-level ozone.

In collaboration with BOEM, we used satellite data from the OMI and TROPOMI sensors to construct an 18+ year record of tropospheric nitrogen dioxide (NO$_2$), a proxy for NO$_x$, in the Gulf Coast region.

NO$_2$ hotspots from ONG platforms were identified using TROPOMI NO$_2$ averages under calm wind conditions. The ONG deepwater platforms increase NO$_2$ background amounts by 7%–13% on average, and up to 25% for larger hotspots. The results in this study facilitate our work on emissions estimates from these sources and on applications to the recently launched TEMPO instrument.