

## Preliminary Study of Greenhouse Gases in the Santos Basin

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**Abstract:** The production of oil and gas onshore and offshore are associated with significant emissions of greenhouse gases, as the entire production chain of oil exploration is a potential source of emission of these gases, especially CH<sub>4</sub>, which is in almost all stages of the process. However, few data is available on emissions from oil exploration platforms in Brazil, despite the increase in oil production on the Brazilian coast since 2008 with the implementation of the Pre-Salt program, which aims to explore oil in the pre-salt layer. Between the explored areas is the Santos Basin which occupies about 350,000 km<sup>2</sup> and is located in the southeast region of the Brazilian continental margin, approximately 290 km off the coast of Rio de Janeiro and encompasses the coastlines of the States of Rio de Janeiro, São Paulo, Paraná and Santa Catarina, with boundaries to the north with the Campos Basin by the Alto de Cabo Frio and to the south by the Pelotas Basin by the Florianópolis Platform. Better understanding the ocean-atmosphere interactions in the Santos Basin region, specifically in the coastal area of São Paulo, a temporal analysis was performed using data from the Visible Infrared Imaging Radiometer Suite (VIIRS) instrument, which provides data on active burning and from Sentinel-5P (Sentinel 5 Precursor satellite) which brings information from several chemical species, such as NO<sub>2</sub> and CH<sub>4</sub>.

**Keywords:** Greenhouse Gases; Oil and Gas; Santos Basin.

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