

## Satellite-derived maritime $\text{NO}_x$ emissions over Chinese seas

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We have applied an inversion algorithm (DECSO) to satellite observations from OMI (Ozone Monitoring Instrument) over Chinese seas for a 10-year period (2007 to 2016). Monthly  $\text{NO}_x$  emissions over such a long period are presented for the first time. No effective regulations on  $\text{NO}_x$  emissions have been implemented for ships in China, which is reflected in the trend analysis of maritime emissions. Simulations by an atmospheric chemistry transport model show a significant influence of maritime emissions on air pollution over coastal areas, especially in summer. The satellite-derived spatial distribution and the magnitude of maritime emissions over Chinese seas are in good agreement with bottom-up studies based on the Automatic Identification System of ships. We will further apply the method to other regions to derive trends. In addition, some results of satellite-derived  $\text{NO}_x$  emissions over Europe will be presented as well.