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## The contribution of shipping to air pollution in the Mediterranean region – a model evaluation study

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Shipping has major contribution to emissions of air pollutants like NO<sub>x</sub> and SO<sub>2</sub> and the global maritime transport volumes are projected to increase significantly. The Mediterranean Sea is a region with dense ship traffic. Air quality observations in many cities along the Mediterranean coast indicate high levels of NO<sub>2</sub> and particulate matter with significant contributions from ship emissions.

To quantify the current impact of shipping on air pollution, models for ship emissions and atmospheric transport can be applied, but model predictions may differ from observational data. To determine how well regional scale chemistry transport models simulate pollutant concentrations, the model outputs from several regional scale models were compared against each other and to measured data.

In the framework of the EU H2020 project SCIPPER, ship emission model STEAM and the regional scale models CMAQ and CHIMERE model were applied on a modelling domain covering the Mediterranean Sea. Modeling results were compared to air quality observations at coastal locations. The impact of shipping in the Mediterranean Sea was extracted from the model excluding shipping emissions.