Analysis of past and future lightning NO_x emissions

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Supervisors

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Project Overview

Aviation and air traffic are the only sources of nitrogen oxides (NO_x) in the atmosphere. Hence any change in lightning occurrence caused by climate change has a direct influence on the impact of aviation NO_x emissions on climate.

A series of simulations with the Earth-System-Model EMAC were performed in order to describe the evolution of the atmosphere in the period 1960 to 2100. They show changes in the occurrence of deep convection and lightning. Currently, the impact of climate change on lightning is debated.

The project aims at contributing to this discussion by analysing trends in the simulation and identifying their causes.

Project Goals

Analysis of satellite and simulation data

- Comparison of observational and simulation data
- Analysis of simulated trends
- Identification causes
- Comparison of lightning parametrisations
- Consequences for the assessment of aviation's impact on climate



Start Autumn 2016 or later



MSc Research Thesis Assignment

