The project aims to understand the role of dynamical coupling between stratosphere and troposphere for the medium term climate response. The goal is to develop a volcanic module for the MIKlip medium term climate prediction system and to investigate the effects of volcanic eruptions on climate. The project involves the development of an additional perturbation for volcanic eruptions, which will be used in the MIKlip simulations. The project also focuses on the mechanisms involved in the interaction between volcanic eruptions and the stratosphere, including the role of stratospheric sudden warming (SSW) events.

The MIKlip model, which is based on the ECHAM6-HAM chemical transport model, is used to study the effects of volcanic eruptions on climate. The model is coupled with the ECHAM6-HAM atmospheric model and the MPI-ESM climate model. The volcanic module is added to the MIKlip model to study the impact of volcanic eruptions on climate and to improve the model's ability to predict volcanic impacts on climate.

The project involves the analysis of volcanic eruption data and the development of a volcanic module for the MIKlip model. The module will be tested using historical volcanic eruption data and will be used to study the impact of volcanic eruptions on climate. The project also involves the development of new techniques for simulating volcanic eruptions and the coupling between the stratosphere and the troposphere.

The project aims to improve our understanding of the role of volcanic eruptions in climate change and to develop better climate models that can predict the impact of volcanic eruptions on climate. The project will involve the analysis of historical volcanic eruption data and will be used to study the impact of volcanic eruptions on climate. The project also involves the development of new techniques for simulating volcanic eruptions and the coupling between the stratosphere and the troposphere.

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Background conditions are not only a source of additive noise for post-eruption decadal climate variability, they also actively influence the mechanisms involved in the post-eruption circulation transition (Zanchettin et al., 2013). Hence, for the decadal prediction of volcanic induced climate perturbations, a precise specification of the initial state of the climate system and of all forcing factors is important.