Mixing of volcanic aerosols with Saharan dust during the La Palma eruption 2021

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Introduction

An eruption of Cumbre Vieja volcano at the island of La Palma in the Canary Islands, lasted from 19 September to 13 December 2021. During 85 days, the longest known eruption of a volcano on La Palma, emitted large amounts of SO2 that were often mixed with saharan dust outflow from north africa (Fig. 1). The co-transport of dust and volcanic gas/aerosols is a unique situation to study the mixing and aging of natural aerosols with significant implications for atmospheric composition, weather and climate research.

Research question

Does mixing with volcanic aerosols accelerate aging of dust particles?

Working plan

Step 1: Literature review, learning ICON-ART

Step 2: Preparation and performing numerical experiments

Step 3: Validation of the results, writing of thesis

Requirements

Motivation, self-organization and team work

Programming: Python (basic), shell & unix (basic)

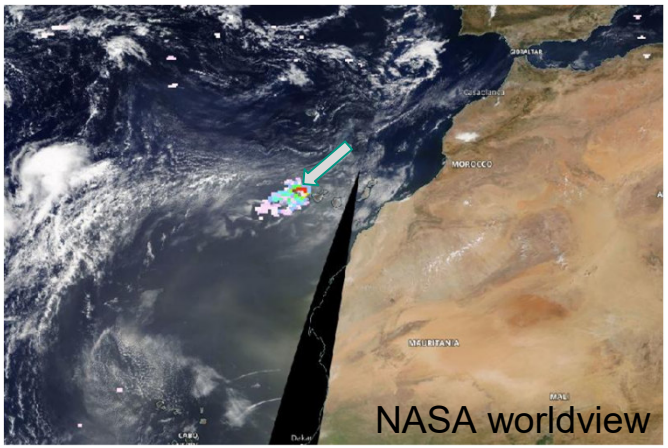

Fig 1: Mixing of saharan dust plume with SO2 from La palma eruption (indicated with arrow) on 28.09.2021