Project: **1223** Project title: **ARTEX** Principal investigator: **Ali Hoshyaripour** Report period: **2023-01-01 to 2023-12-31** 

For three courses organized by my team at Karlsruhe Institute of Technology (KIT), the participants performed CON-ART experiments on Levante. The courses are:

- 1- "ICON-ART training" was held on 11-12 May 2023 online with 21 participants. The participants performed the following experiments:
  - a. Aerosol experiment 1: In this experiment, the participants will learn about the emissions form a point source and the basic preparations for ICON-ART simulations. The experiments will be on a R02B06 Grid (ca 40 km horizontal resolution) and include the variability of the source parameters.
  - b. Aerosol experiment 2: This experiment is similar to aerosol experiment 1 but with aerosol dynamics and simple chemistry.
  - *c.* **Chemistry experiment**: In this experiment, the participants will learn about the atmospheric chemistry simulations with ICON-ART. The experiments will be on a R02B06 Grid (ca 40 km horizontal resolution).
- 2- "Turbulent Diffusion": MSc. Meteorology, summer semester with 16 participants. Workshop accounts for 8 weeks. The student performed the following experiments:
  - *a.* Emission and transport of tracers: to learn about the emissions form a point source and the basic preparations for ICON-ART simulations. The experiments were on a R02B06 Grid (ca 40 km horizontal resolution) and included the variability of the source parameters.
  - b. Dust-Radiation Interactions (DRI): to learn about the emission and transport of mineral dust and the preparations for natural aerosol simulations with ICON-ART. The experiments were on a R02B06 Grid (ca 40 km horizontal resolution) and included DRI on/off.
  - c. Atmospheric Chemistry with MECCA: to learn about the atmospheric chemistry simulations with ICON-ART. The experiments were a R02B06 Grid (ca 40 km horizontal resolution).
- 3- "Volcanic plume modeling" during the VOLIMPACT summer school on 05.09.2023 in Greifswald with 26 participants in 13 groups. The participants simulated volcanic plumes with varying source parameters.