

MegDEtH NEWSLETTER #3, September 2023

Intro

The Mineralogy of Dust Emissions and impacts on Environment and Health (MegDEtH) is a project currently implemented at the Research Center for Atmospheric Physics and Climatology at the Academy of Athens, that has received a funding of 189,715.00 € from the Hellenic Foundation for Research and Innovation. The duration of the project is 36 months, starting April 2021 and the main project focus is on:

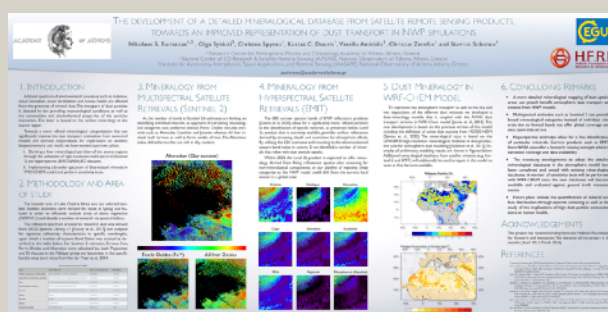
- Deriving a mineralogical map of Saharan dust sources from hyper-spectral and multi-spectral satellite sensors.
- Constraining dust modeling simulations with satellite observations.
- Quantifying the impacts of dust mineralogy on radiative transfer, cloud formation, ocean fertilization and human health.

Project News

1. Publications & Conference Presentations

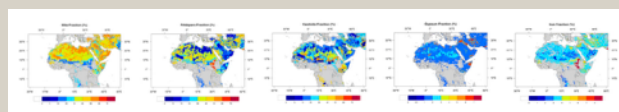
- "The Development of METAL-WRF Regional Model for the Description of Dust Mineralogy in the Atmosphere" by Stavros Solomos et al has been published in MDPI:Atmosphere journal as part of the Special Issue "Characteristics of the Atmosphere and Their Impact on Quality of Life, Ecosystems, and Human Activities" (<https://www.mdpi.com/2073-4433/14/11/1615>).
- "The Development of a Dust Mineralogy Map from Satellite Retrievals and Implementation in WRF-Chem" by Stavros Solomos et al has been published in MDPI:Environmental Sciences Proceedings journal. This article belongs to the Proceedings of 16th International Conference on Meteorology, Climatology and Atmospheric Physics—COMECAP 2023. (<https://www.mdpi.com/2673-4931/26/1/54>)
- The development of a detailed mineralogical database from satellite remote sensing products,

towards an improved representation of dust transport in NWP simulations" by Nikolaos S. Bartsotas, Olga Sykioti, Christos Spyrou, Kostas C Douvis, Vassilis Amiridis, Christos Zerefos and Stavros Solomos was presented at the 2023 EGU General Assembly 2023 held in Vienna, Austria



2. Implementation of GMINER30 database in WRF-Chem

The GMINER30 (Global Mineral Database on 30sec resolution, Nickovic et al, 2012) that provides mineral fractions of potentially dust productive soils, has been successfully implemented in WRF-Chem model and the Netcdf file is available on our website under "Project News".



3. Group Member additions

Dr. Christina Kalogeri joined the Research Team in April 2023, so currently our group consists of

Dr. Stavros Solomos, Principal Investigator
Dr. Christos Spyrou, Post-Doc Researcher
Dr. Nikolaos Bartsotas, Post-Doc Researcher
Dr. Christina Kalogeri, Post-Doc Researcher
Dr. Olga Sykioti, Geological Remote Sensing Expert
Dr. Vassilis Amiridis, Atmospheric R.S. Expert

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