



InDust: International Network to encourage the use of monitoring and forecasting dust products

Sara Basart (1), Slodoban Nickovic (2), Vassilis Amiridis (3), Isadora Christel (1), Pavla Dagsson-Waldhauserova (4), Adam Durant (5), Hesham El-Askari (6), Stelios Kazadzis (7), Lucia Mona (8), Alexandra Monteiro (9), Anca Nemuc (10), Ina Tegen (11), György Varga (12), Ana Vukovic (13), Bernadett Weinzierl (14), and the the InDust participants

(1) Earth Sciences Departement, Barcelona Supercomputing Center, Barcelona, Spain , (2) Republic Hydrometeorological Service of Serbia, Belgrade, Serbia, (3) National Observatory of Athens, Athens, Greece, (4) University of Iceland, Reykjavik, Iceland, (5) Aeroanalytica Ltd., Cambridge, United Kingdom, (6) University of Alexandria, Alexandria, Egypt, (7) Physikalisch-Meteorologisches Observatorius Davos, World Radiation Center, Switzerland, (8) Istituto di Metodologie per l'Analisi Ambientale, Consiglio Nazionale delle Ricerche, Tito Scalo, Italy, (9) CESAM, University of Aveiro, Aveiro, Portugal, (10) National Institute of R&D for Optoelectronics, Bucharest, Romania, (11) Leibniz Institute for Tropospheric Research, Leipzig, Germany, (12) Research Centre for Astronomy and Earth Sciences, Hungarian Academy of Sciences, Hungary, (13) Faculty of Agriculture, Belgrade, Serbia, (14) University of Vienna, Vienna, Austria

Sand and Dust Storms (SDS) are extreme meteorological phenomena that generate significant amounts of airborne mineral dust particles. SDS play a significant role in different aspects of weather, climate and atmospheric chemistry and represent a serious hazard for life, health, property, environment and economy. Understanding, managing and mitigating SDS risks and effects requires fundamental and cross-disciplinary knowledge.

Over the last few years, dust numerical prediction and observational products from ground- and satellite platforms have become prominent at several research and operational weather centres due to growing interest from diverse stakeholders, such as solar energy plant managers, health professionals, aviation and policy makers. Current attempts to transfer tailored products to end-users are not coordinated, and the same technological and social obstacles are tackled individually by all different groups, a process that makes the use of data slow and expensive.

The EU-funded COST Action InDust has an overall objective to establish a network involving research institutions, service providers and potential end users of information on airborne dust. Because, airborne dust transport has multi- and trans-disciplinary effects at local, regional and global scales; InDust involves a multi-disciplinary group of international experts on aerosol measurements, regional aerosol modelling, stakeholders and social scientists. Moreover, InDust searches to coordinate and harmonise the process of transferring dust observation and prediction data to users as well as to assist the diverse socio-economic sectors affected by the presence of high concentrations of airborne mineral dust.

Cooperation with institutions from near-neighbouring and international partner countries in Northern Africa and the Middle East will be essential and of mutual benefit, because dust concentrations are much higher and the adverse effects more severe near the sources than far downwind. Moreover, the participation of South African, American and importantly Asian partners brings the possibility of extending the application of the developed products, protocols and tools well beyond the European borders, including areas like Asian regions where dust particles play a significant role in the air quality and meteorological processes.