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inDust: International Network to encourage the use of monitoring and forecasting DUST products

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Sand and Dust Storms (SDS) are extreme meteorological phenomena that generate significant amounts of airborne mineral dust particles. SDS plays a significant role in different aspects of weather, climate and atmospheric chemistry. Also, SDS represents a severe hazard for life, health, property, environment and economy, which is aligned with several Sustainable Developed Goal (SDG) targets established by the United Nations (UN). Understanding, managing, and mitigating SDS risks and effects requires fundamental and cross-disciplinary knowledge.

Over the last few years, there is an increasing need for SDS accurate information and predictions to support early warning systems, and preparedness and mitigation plans in addition to growing interest from diverse stakeholders, such as solar energy plant managers, health professionals, aviation and policymakers from environmental and health public sectors. 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 (www.cost-indust.eu, CA16202) has an overall objective to establish a network involving research institutions, service providers and potential end-users of information on airborne dust that can assist the diverse socio-economic sectors affected by the presence of high concentrations of atmospheric dust. In line with this main objective, the network is being worked on the identification and engagement of representatives of dust affected socio-economic sectors (targeting on air quality and health, aviation and solar energy) from different countries in Europe but also in North Africa and the Middle East. 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.

The primary outcomes of the network are the identification of the needs of the various and new dust-related products and services able to satisfy these needs. As a result, the network has been working on a dust catalogue which includes an overview of (ground-based and satellite) observations and model products.

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