



## **Quantifying the contribution of individual dust sources to the summertime dust hotspot in the central and western Sahara**

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The central and western Sahara (CWS), a huge area encompassing parts of Algeria, Niger, Mali and Mauritania, is the dustiest place on Earth during the northern hemisphere summer. This dust is known to come from a large number of disperse sources across the region, which have been identified predominantly from satellite observations. We utilise an automated scheme that tracks individual dust plumes in data from the spaceborne Spinning Enhanced Visible and Infrared Imager (SEVIRI), available every 15 minutes at  $\sim 0.03^\circ$  spatial resolution, to quantify the contribution of dust plumes from known sources to the overall CWS dust hotspot in terms of 1) frequency of dust detection and 2) total plume Aerosol Optical Depth (also derived from SEVIRI data). Results show that dust sources in the south of the region, whose activation is strongly linked to the dynamics of the West African Monsoon and convective processes, make a significantly greater contribution to the dust hotspot than sources in central Algeria and northwest Mali that, while equally or even more frequently active, give rise to plumes that are much more spatially constricted and short lived.