Newly found aerosols from Sahara could be useful to study climate change

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Washington, Oct 5 (ANI): Scientists have characterized a new type of aerosols from the Sahara desert, which could be useful to study climate change.

The characterization was made by scientists from the Soil Science and Geopharmacy Research Group of the University of Granada in Spain.

Known as 'iberulites', the aerosols could be useful for the study of relevant atmospheric reactions from Earth.

Researchers have insisted that such iberulites form in the troposphere from mineral small grains emitted from desert soils and bordering regions, burst into the atmosphere in a chaotic way, collect water vapour which becomes condensed and make up little rain drops.

Scientists point out that the Sahara is a powerful emitter of atmospheric dust, which travels to the Amazon and Caribbean regions, including Florida, also reaching the North of Europe, Israel and even the Himalayas.

Such mineral grains, which contain iron, calcium, sulphur and sometimes phosphorus, fertilize the soil, forests and plankton of the oceans, lakes and seas they go through.

Such small drops of water and mineral dust grow in size as they collide with others and capture more dust, and are subject to characteristic hydrodynamic processes.

As they get dry, they are swept away by powerful air drafts.

During this trip, which can take several days, the iberolites experience a series of physical-chemical reactions and processes simultaneously, such as the incorporation of SO2 from volcanic areas (the Canary Islands), or the adhesion of planktonic organisms, virus and marine salts in the surface of the immature iberulite as they get close to the Atlantic area of Portugal, Morocco and the Gulf of Cadiz.

Hydrodynamic processes, mechanically generated in such minuscule water and dust drops, form the shape of the artefact until it becomes a new atmospheric aerosol particle called iberulite with a vortex, quite similar to a micro spherulite.

The researchers have pointed out that, obviously, the fact that they have been collected in Granada does not exclude that, due to gravity, the biggest ones also fall in the Earth's surface before arriving here.

According to Jesus Parraga Martinez, of the Department of Edaphology and Farming Chemistry of the University of Granada, The relevance of the discovery is that the atmosphere sends us a 'present' manufectured by her, which tells us that the law of nature is able to create very beautiful and internally structured shapes from chaos in spite of the turbulent environment in which they are created.

The research has fully revealed the mechanisms for the formation of iberulites, which could be useful as environmental or paleoclimatic markers, or to change the models of radioactive transference in the atmosphere. (ANI)

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