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Type: **Oral Presentation**

The Rheology of Granular Media: from Engineering to Geological Applications

Monday, 22 May 2023 16:15 (30 minutes)

Granular materials exhibit a broad range of intricate dynamic behaviours. The study of their hydrodynamics is extremely relevant in the chemical and process industries, where those materials are widely handled and produced. Understanding how internal (e.g., particles size and shape) and external (e.g., applied stresses, moisture content) physical properties impact on the flow behaviour of solid particles helps industrial practitioners handle and produce particulates in an efficient and less costly way. Building upon previous findings applied to the process industry, the talk explores the challenges associated with the dynamic behaviour of dry and wet granular material and discusses recent experimental and modelling efforts on the flowability of pyroclastic powders. Pyroclastic powders are investigated with the aim of predicting and managing the hazard resulting from volcaniclastic debris flows, natural phenomena which occur when a mixture of pyroclastic fallout/current deposits and water move down slopes under the action of gravity.

Participation

In-Person

References

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Energy Transition Focused Abstracts

Primary author: OCONE, Raffaella (Heriot-Watt University)

Presenter: OCONE, Raffaella (Heriot-Watt University)

Track Classification: (MS24) Invited and Plenary Sessions