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## **Chronology of the 2015 Calbuco eruption, Chile, based on tephra stratigraphy and interpretation of the pyroclastic density current deposits.**

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On 22-23 April 2015 Calbuco Volcano in southern Chile erupted, generating sub-Plinian eruption columns, multiple topographically confined pyroclastic density currents (PDC's), and both hot and cold primary eruption-triggered lahars in 11 drainages that caused significant damage to infrastructure. The eruption emplaced c. 0.31 km<sup>3</sup> of NE-dispersed tephra fall and PDC deposits, dominated by relatively coarse-grained and dense scoria and lapilli (1800-2100 kg/m<sup>3</sup>). We present distribution maps and grain-size and componentry characteristics of both the proximal tephra deposits and the pyroclastic density current deposits in several drainages. The pyroclastic density current deposits are classic scoria flows with distinctive lobate topography emplaced within the upper drainages. Sections through the flows, generated by erosion when the rainfall-triggered lahars were generated means that the flow unit interiors are accessible and easily studied. Based on the field data, combined with observations of the eruption, we interpret the chronology of the eruption and the emplacement mechanisms of the pyroclastic density currents.