

# V45C-0141 - An Update and Implementations of the Community-Driven Best Practices Recommendations for Tephra Studies—From Collection Through Analysis



Thursday, 16 December 2021



17:00 - 19:00



Convention Center - Poster Hall, D-F

## Abstract

Tephra is a unique volcanic product with an unparalleled role in understanding past eruptions, the long-term behavior of volcanoes, and the effects of volcanism on climate and the environment. Tephra deposits also provide spatially widespread, extremely high-resolution time-stratigraphic markers across a range of sedimentary settings and are used by many disciplines (e.g. volcanology, seismotectonics, climate science, archaeology, ecology, public health, ash impact assessment). The interdisciplinary shift in tephra studies over the last two decades is challenged by the lack of standardization that often prevents comparison amongst various regions and across disciplines. To address this challenge, the global tephra community has united through a series of workshops to establish best practice recommendations for tephra studies, including sample collection, analysis and data reporting (<https://doi.org/10.5281/zenodo.3866266>). This new standardized framework is being incorporated into digital tools and data repositories and supports FAIR (findable, accessible, interoperable and reusable) data principles. Widespread adoption will facilitate consistent tephra documentation and parametrization, foster interdisciplinary communication and improve the effectiveness of data sharing among diverse communities of researchers. Here we report on recent implementations of the best-practice recommendations including: 1) a set of templates for samples, methods documentation, and data reporting, 2) a tephra module in the StraboSpot field app (<https://strabospot.org>), 3) implementations at SESAR and EarthChem, including a tephra community portal (<https://earthchem.org/communities/tephra/>), 4) implementation in the Sparrow laboratory data system (<https://sparrow-data.org/>), and 5) a new manuscript supporting the framework. Data linking is facilitated by extensive use of unique identifiers including ORCIDs for people, IGSNs for field sites and samples; DOIs for publications, data, and methods; and Smithsonian IDs for volcanoes and eruptions. These developments allow users to follow simple workflows to archive data and facilitate faster access to key research by secondary users.

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