



## **The use of social media in volcano science communication - challenges and opportunities**

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Volcanoes have always captured people's attention, featuring throughout history in our art, literature, religions, legends, oral and written traditions and news. The 1883 eruption of Krakatau, Indonesia, first received the attention of the global mass media. The telegraph reports of Krakatau heralded a new era in interest in global catastrophic events. Since the turn of the 20th century newspapers worldwide have column inches dedicated to eruptions and TV shares videos and images of spectacular, but often catastrophic events.

Most recently, social media gives members of the public unprecedented access to volcanologists, volcano observatories and institutions and amateur volcanologists. There are over 3 billion internet users using social media sites, and these numbers are expected to grow. Thus, social media is a powerful tool that can be used by volcanologists, volcano observatories and disaster management authorities to engage the public, particularly during times of volcanic crises.

During a volcanic crisis, effective communication between the institution responsible for monitoring the volcano, local government, civil defense authorities, the media and ultimately the public is essential to ensuring safe management of the crisis. The rapidity in which news can be posted and then disseminated through social media can allow for quickly disseminating information, sharing official sources of information, seeing rumours forming in real time and addressing them, and having a two-way conversation (answering questions) with the public. However, incorrect information can be spread just as rapidly. Here we summarise the opportunities and challenges that a volcano-community presence on social media brings to crisis management based on our experiences, discussions with colleagues and observations during recent events. We identify a clear and urgent need for research on the effectiveness of social media channels which are increasingly becoming the dominant line of both official and unofficial communication during a volcanic crisis. This research should provide the evidence-base required to update the Professional conduct of scientists during volcanic crises for a social media context and ultimately improve communication during a crisis with the aim of reducing the impacts of volcanic eruptions.