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HPLC applied to volcanology: From Crater Lake monitoring to ash samples analysis**Ana Silvia Casas**

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To study and understand volcanism on earth (their occurrence, impacts on civilization/environment, and monitoring), are not just necessary activities for the development of risk mitigation strategies in vulnerable areas, but also very interesting research topics. To obtain reliable geochemical-data for our research, HPLC was found to be an excellent analytical tool; it allowed us to perform sulfur speciation of El Chichón volcano Crater Lake, an active volcano in South Mexico, responsible for the worst volcanic disaster in Mexico's modern history. Our HPLC-speciation methodology adds a new element to more accurately forecasting of future periods of volcanic unrest. The next step of our research is to study gas adsorption onto ash-particles, during large volcanic eruptions. For this new research I will carry my HPLC background to characterize ash-samples before and after experiments (ash samples will be exposed to various hydrous and anhydrous volcanic gas mixtures at high temperatures (200-800°C) for different time-series (1, 3, 5, 15, 30 and 60 min). The results of these experiments will help us, to constraining more effectively the complex interactions between volcanic emissions (i.e., volcanic ash and gas) and both human infrastructure and natural systems.

Biography

Ana Silvia Casas obtained her Master's Degree in Earth Sciences at the Geophysics Institute of the National Autonomous University of México (UNAM) in 2015, with the thesis: "Sulfur speciation with HPLC for of El Chichón volcano crater lake monitoring". In the same year she was granted by the German Academic Exchange Service (DAAD, for its acronym in german) with a scholarship to pursuit her PhD in Volcanology at the Ludwig-Maximiliand-University (LMU) in Munich, Germany, where she currently studies diverse volcanic phenomena.

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