Call for Workshop ICDP-Eifel (4 – 6 December 2023):

Follow the CO_2 - Drilling into an actively degassing intraplate volcano underlain by a silicic-carbonatitic intrusion

The Eifel region, Germany, hosts hundreds of distributed volcanoes of Quaternary age in an intracontinental setting and is renowned as the type locality of maar volcanism. Laacher See volcano in the eastern part of the region stands out as a sizable, dormant, but actively deforming and degassing system that represents the second youngest silicate-carbonatitic magmatic complex worldwide currently not erupting. Moreover, the Eifel boasts an extensive record of past research, easy access, and excellent infrastructure that uniquely permits implementation of cutting-edge scientific methods to study this type of distributed volcanism.

Drilling in the Laacher See region has the potential to enhance our knowledge on distributed volcanic fields, which are characterized by irregular eruptive recurrence over protracted durations of activity, and specific hazards resulting from high CO_2 fluxes from the mantle to the surface. In addition, silicate-carbonatitic magma systems such as the Laacher See are globally recognized as major hosts for critical metal deposits. Laacher See is an ideal testbed to evaluate the physical and chemical properties of a shallow (~5–6 km depth at its top) : intrusive silicate-carbonatitic magmatic complex formed by volatile-rich magmas and its associated hydrothermal system. Both of these features are accessible by scientific drilling. Drilling can provide the most comprehensive and well constrained answers to the following interconnected questions: 1) Why is the shallow hydrothermal system above a magma system that erupted only 13,000 years ago seemingly cold? 2) What are past and present conditions of melt and fluids within and around a silicate-carbonatitic magma systems? 3) Why is this same system highly dynamic based on extensive CO_2 degassing, seismic activity, and exceptionally high rates of localized uplift?

With this workshop we aim to harness enthusiasm for collaborative research to further develop and refine ideas on continental distributed volcanism, its geodynamic relevance, as well as hazard and resource potential in line with ICDP themes. We see high potential for a successful workshop that will gather ideas on how to maximize the scientific gains from drilling into a magmatic-hydrothermal system of a dynamic yet safely accessible volcano. By reaching out to a broad and diverse international community, the workshop will sharpen scientific questions of global scope and relevance, and address opportunities and risks of drilling at particular sites and with potentially novel techniques.

The workshop will involve plenary and poster presentations to outline the current status of research and highlight critical research problems. Time will be allocated for proposal ideas that will be presented in short lightning talks. Based on these ideas and interests, working groups will be formed, allowing participants flexibility to move between groups based on their interests. Technical aspects will be discussed involving industry and ICDP participants. Results of the workshop will be summarized in a white paper, which will form the basis for the writing of the ICDP proposal for scientific drilling in the Eifel.

The workshop will be held in Bad Honnef, Germany, 4 - 5 December 2023, with an optional field trip to the East Eifel Volcanic Fields on 6th December. The venue is close to 3 international airports at Cologne/Bonn, Düsseldorf and Frankfurt. Partial and full travel funding is available, thanks to support of ICDP. To apply, please fill in the online form by **31. August 2023**. We request that individuals who plan to attend but do not require travel assistance indicate this in their short statement. Early career scientists are strongly encouraged to apply. Preference will be given to scientists from ICDP member countries.

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