

One-day training: “An integrated introduction to the techniques used by researchers to study underwater volcanic activity, with a particular focus on magmatic degassing and its risks”

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This workshop provides an integrated introduction to the technique’s researchers use to study subaqueous volcanic activity, with a particular focus on magmatic degassing and its hazards. It is structured in three parts:

1. The Sound of Water

An overview of the principal marine geophysical survey techniques; bathymetry, side-scan sonar, sub-bottom profiling, seismic methods, and magnetic and gravity surveys, highlighting their complementary roles in detecting, imaging, and mapping volcanic activity beneath lakes and oceans.

2. Secrets in the Bubbles

A deep dive into the dynamics of degassing in volcanic lakes, exploring the physical, chemical, and geological processes that govern gas accumulation and release in these high-risk environments, and how these processes can illuminate ongoing or impending volcanic activity.

3. Pop Goes the Lake

A presentation of new research demonstrating how passive hydroacoustics can be used to monitor volcanic activity and subaqueous gas fluxes, with a close look at recent findings from Lake Kivu. These results point toward a promising method for early detection of conditions that may precede limnic eruptions, offering a potential breakthrough in forecasting one of the world’s most lethal yet least understood natural hazards.



Magmatic degassing in the Mediterranean (Panarea)



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