Volcano Observatory Best Practice 6th Workshop

20-24 SEPTEMBER 2027

DECISION-SUPPORT TOOLS FOR VOLCANO OBSERVATORIES

LOCATION

Nicolosi (Sicily), Italy, at the foot of Mount Etna

HOST

Istituto Nazionale di Geofisica e Vulcanologia - Italy

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COMUNE DI NICOLOSI

ISTITUTO NAZIONALE DI GEOFISICA E VULCANOLOGIA

IAVCEI

VDAP
Volcano Disaster Assistance Program

EXPRESS YOUR INTEREST!

If you would like to attend VOBP6, please express your interest ***online through this pre-reservation form*** between **November 15, 2026 and January 1, 2027**. The organizing and program committees will let you know by February if there is room

MORE INFO IN THE FOLLOWING PAGES

THEME OF THE WORKSHOP

Decision-Support Tools for Volcano Observatories

Volcano observatories increasingly rely on decision-support tools to manage growing volumes of multi-parameter data. These tools assist monitoring, data analysis and visualization, warning communication, and outcome modeling. They support decision-making but do not replace expert judgement. Related products include hazard maps, eruption scenarios, forecasts, and probabilistic volcanic hazard assessments. VOBP6 will explore what tools are available and how observatories use them during both routine operations and volcanic unrest.

Such products draw on a range of approaches, including expert knowledge from observatory staff and research partners, development of physical, conceptual, and empirical models, and structured methods for aggregating expert opinion, such as elicitation exercises and event-tree frameworks. Recent advances in artificial intelligence and machine learning create new opportunities while raising important questions about reliability, transparency, and the relationship between data-driven outputs, expert judgement, and physics-based models.
Observatory needs vary widely. A persistently active volcano with an established, often automated, early-warning system presents different challenges from a volcano reawakening after a long period of repose, where baseline data may be scarce. We particularly welcome contributions from those with relevant operational experience.

The outputs of these tools must ultimately be communicated to decision-makers and stakeholders, requiring effective characterization and communication of uncertainty. Although institutional and cultural contexts differ, common challenges exist in how observatories communicate potential outcomes and uncertainty.

Consistent with the VOBP spirit, emphasis will be placed on proven, shareable tools, especially open-source and community-developed resources. Emerging tools are also welcome. In addition to talks and posters, participants will test tools in small groups using a shared published dataset and discuss their experiences in focused workshops.

Key themes may include:

- Tools to analyze and visualize monitoring data
- Automated detection and alarm systems, and the role of human judgement
- Expert elicitation exercises
- Event-trees and their creation and utilization
- Online and open-source tools and their advantages/limitations
- Generation of short-term or real-time hazard and risk maps
- Artificial Intelligence and Machine Learning: opportunities, limitations and good practice
- Removing bias from group decision making
- From research to operations: what it takes for a tool to be adopted and maintained by an observatory or the community

Who should attend?
Observatory directors and technical staff, hazard and risk-modeling scientists, tool developers and users at observatories, research institutions, and academia

PRACTICAL INFORMATION

DATES

The workshop will be from September 20 to 24, 2027. However consider arriving in the afternoon of Sept 19, 2027 and departing on Sept 25, 2027.

ATTENDANCE

Attendance at VOBP meetings is typically **between 50 and 100 people**. Each observatory should aim to send **1 or 2 individuals**: for example, for VOBP 6, **an observatory leader and a data scientists, a numerical modeler or a computer scientist** might be appropriate.

The meeting organizers will seek to identify travel funds for participants with limited resources. Observatories from wealthier countries are expected to support their participants. Scientists and non-scientists who work outside volcano observatories are welcome to come but will generally need to identify their own funding.

PRE-REGISTRATION

An ***online pre-reservation form*** will be active starting on November 15, 2026 and **closes on January 1, 2027**. Pre-reservation is required; however, it does not secure a spot in the meeting. The pre-reservation process will allow the organizers to plan local lodging and ensure that the number of meeting attendees scales to the size of the venue, giving priority to 2 participants from each VO. Pre-registrants will be contacted and given further information in February. The actual registration fee will not be collected until summer 2027.

The registration fee is expected to be about **320 Euros** and will cover

- icebreaker on afternoon of September 19
- coffee/snack service,
- a daily lunch,
- a field trip transportation and lunch,
- shuttle service between the meeting venue and the Catania Airport and Train Station at the beginning and end of the meeting.

Accomodation costs (guaranteed up to 80 people) varies from 30 to 60 euros per night including breakfasts. Social dinner (optional) will be 30 euros.

FUNDING

Limited funding is available through INGV and USGS (through the USGS VDAP program), as well as IAVCEI. We can provide travel, room, and board for **observatory staff from countries with limited resources**. In first place we will provide funds for one person per observatory, but we will do our best to support more if possible.



Photo courtesy of Giovanni Giuffrida