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Sommario/riassunto	Forecasting volcanic eruptions and their potential impacts are primary goals in Natural Hazards research. Active volcanoes are nowadays monitored by different ground and space-based instruments providing a wealth of seismic, geodetic, and chemical data for academic volcanologists and monitoring agencies. We have better insights into volcanic systems thanks to steady improvements in research tools and data processing techniques. The integration of these data into physics-based models allows us for example to constrain magma migration at depth and to derive the pressure evolution inside volcanic conduits and reservoirs, which ultimately help monitor evolving volcanic hazard. Yet, it remains challenging to answer the most crucial questions when the threat of an eruption looms over us: When will it occur? What will be its style? Will it switch during its course? How long will the eruption last? And most importantly: will we have enough time to alert and evacuate population? Addressing these questions is crucial to reduce the social and economic impact of volcanic eruptions, both at the local and global scales. For example, the 2014 eruption at Ontake (Japan) had only limited spatial impact but killed dozens of hikers; in contrast, the 2010 Eyjafjallajokull eruption (Iceland) did not cause any human loss but paralyzed the European air space for weeks. Several limitations arise when approaching these questions. For example, short-term eruption forecasts and models that relate changes in monitoring parameters to

the probability, timing, and nature of future activity are particularly uncertain. More reliable and useful quantitative forecasting requires the development of optimized and integrated monitoring networks, standardized approaches and nomenclature, and a new range of statistical methods and models that better capture the complexity of volcanic processes and system dynamics.