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SPEAKER

David Miller, Alaska Volcano Observatory, USGS

TITLE

Imaging the upper crustal magmatic system at Okmok caldera

ABSTRACT

The volume and composition of magmas emitted during caldera eruptions are strongly impacted by underlying magma storage and transport pathways. To image these pathways at Okmok, we employ earthquake and seismic noise tomography to model the subsurface velocity and radial anisotropy. We infer the presence of a central stacked sill complex in the upper crust, ringed by an extensive dike system. Patterns of seismicity analyzed in conjunction with the radial anisotropy model reveal whether magma pathways are able to tap additional regions of evolved melt hosted within sill storage. This analysis may be useful in assessing the likelihood that additional regions of melt storage will contribute to a future eruption.

BIOGRAPHY

David is a PhD student at the University of Wisconsin-Madison, supervised by Ninfa Bennington and Cliff Thurber. Working in the broad area of volcano seismology, his research focuses on employing ambient seismic noise for both imaging and time series analysis, as well using anisotropy to resolve features on the volcanic scale. He is currently on an NSF internship at the AVO, working with Matt Haney to compare noise-derived velocity change to periods of deformation at Alaska-Aleutian volcanoes.