



## **Geophysical observations preceding the 2015 Axial Seamount eruption**

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Mid-ocean ridge volcanism forms two-thirds of the Earth's surface yet our knowledge of the dynamics of mid-ocean ridge eruptions is limited due to the difficulty of long-term monitoring on the seafloor. A recently-established cabled observatory atop Axial Seamount on the Juan de Fuca ridge allows unprecedented monitoring of a ridge-based hotspot volcano. Integrating observed patterns of seismicity, seismic velocity change and deformation, we infer that the volcano's 2015 eruption was preceded by an increased rate of magma influx into a laterally-discontinuous shallow magma reservoir. Our results highlight that the shallow magma reservoir can be relatively complex with multiple segments of eruptible melt, and that the different segments can interact during the same diking-eruptive sequence.