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A comparison of suggestively fluid-driven seismicity patterns in Iceland and the Azores

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Iceland and the Azores are both situated along the northern Mid-Atlantic ridge.The oldest known rocks in both locations are younger than 20 million years and active seismicity is mostly restricted to transform zones. However, fluid driven seismic swarm activity is recognized along the extensive part of ridge and subparallel and/or oblique structures along the transforms. We performed a study of double-difference relocation of seismicity and moment tensor inversion for swarms north of Iceland and beneath Sao Miguel island. None of them led to a known eruption, but all of them seem to be attached to fluids moving in the subsurface.

We compare the characteristics of the swarms to find common features and gain a wider perspective on the dynamics within seismic swarms. This could help to define possible eruption scenarios along hot spot-ridge interaction regimes.