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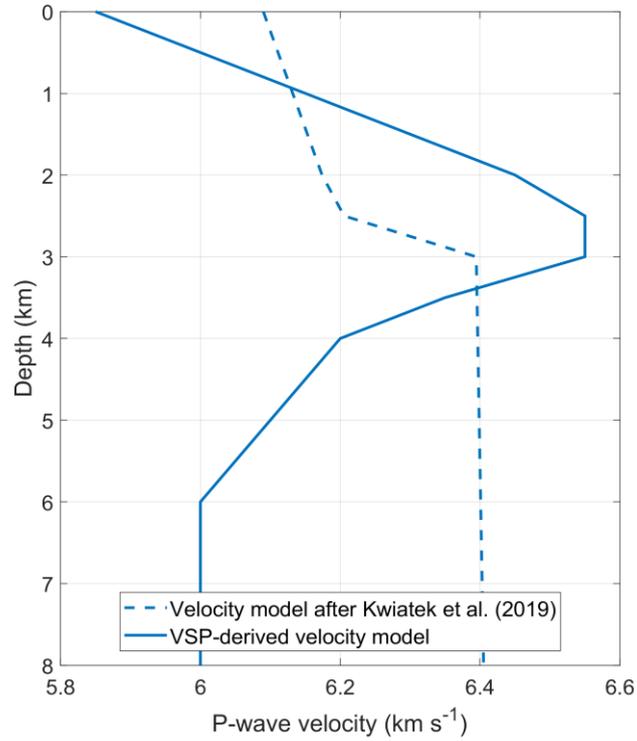
Supplement of

Seismicity during and after stimulation of a 6.1 km deep enhanced geothermal system in Helsinki, Finland

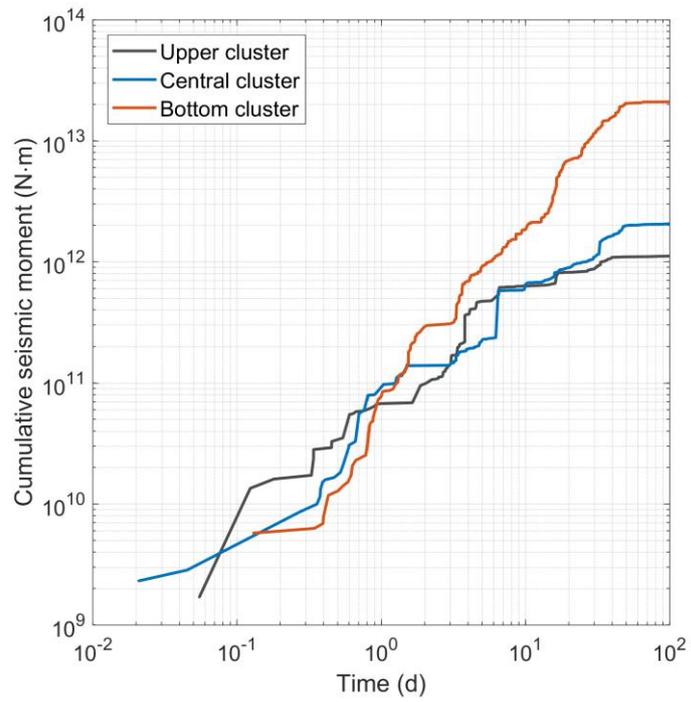
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5 **Figure S1.** Comparison of the updated 1D layered velocity model derived from calibration shots of VSP campaign (solid line) with the 1D layered velocity model used in Kwiatek et al. (2019) (dashed line). The VSP-derived velocity model shows a velocity inversion between 3 and 6 km depth. Below this velocity inversion, a constant velocity of 6 km s⁻¹ is suggested from sonic logs which were used for velocity estimation between 5.1 km and 6.4 km depth.



10 **Figure S2.** The cumulative seismic moment of each hypo-center cluster considering stimulation as well as post-stimulation times.

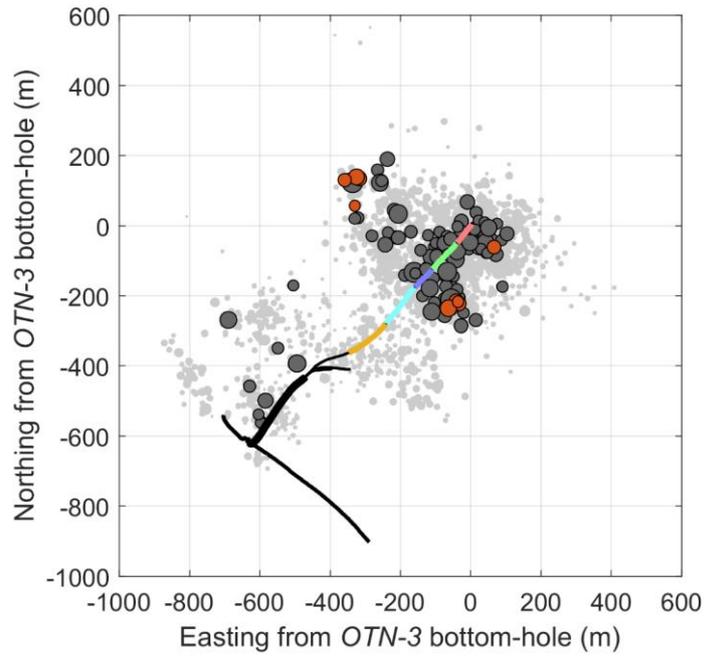


Figure S3. Map view of all relocated events. Events with $M_w \geq 1$ that occurred during and after the stimulation are color-coded as dark grey and orange, respectively.

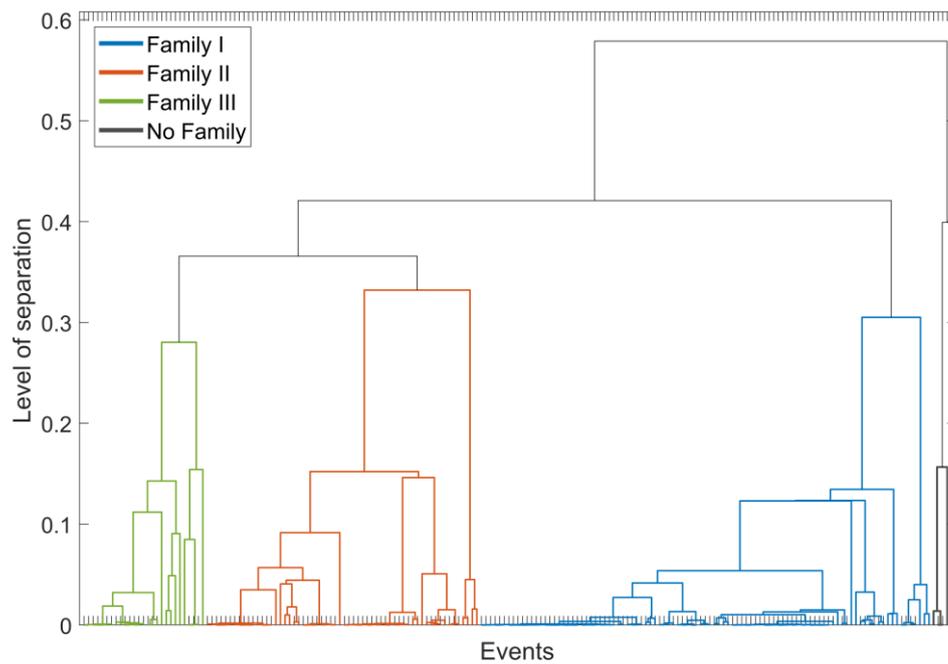


Figure S4. Dendrogram showing separation of FM events into family I-III based on cluster analysis of rotation angles.

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Table S1. The percentage of FM events displaying the same polarity for each station as the most repetitive polarity pattern which is presented by the focal mechanisms for each family in Fig 8a-c.

	MALM	MUNK	UNIV	RUSK	MURA	TAGC	LASS	LEPP	ELFV	TVJP	TAPI	OTRA	OTN
Family I	93 %	87 %	76 %	54 %	93 %	97 %	87 %	100 %	99 %	95 %	82 %	95 %	99 %
Family II	100 %	63 %	78 %	63 %	93 %	90 %	50 %	97 %	93 %	98 %	93 %	95 %	98 %
Family III	93 %	85 %	74 %	56 %	96 %	100 %	74 %	93 %	100 %	96 %	89 %	96 %	100 %