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Recent microseismicity observed at Hekla volcano and first velocity inversion results

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Hekla is one of the most active and dangerous volcanoes in Iceland presenting a high hazard to air travel and a growing tourist population. Until now the pre-eruption warning time at Hekla is only around one hour. In 2018 we installed the real-time seismic network HERSK directly on Hekla's edifice. If microseismicity on Hekla increases prior to the next eruption the network could possibly provide a means to improve early warning. In addition it is hoped that HERSK will better our understanding of the processes driving the evolution of pre-eruptive seismicity. The configuration and tuning of a dedicated real-time detection and location system requires the determination of a suitable velocity model and station corrections. We present a catalogue of recently detected local events that we use to invert for a 1-D velocity model. We observe significant variations in station corrections and conclude that it is important to account for these in the real-time detection and location system which we are developing based on the SeisComp3 software.