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temporary seismic array during modernization of IMS station

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The PS19 seismic station (GERES) is part of the IMS primary seismic network for verification of the CTBT. The station consists of 25 array elements with an aperture of about 4 km. The modernization of GERES in 2017/2018 implicated a general shutdown of the operation for 18 months, since the intra-array cabling was replaced and new equipment for power supply and data acquisition was installed. However, the absence of this station would have unacceptably decreased the network performance in Europe. Therefore, the operation of a temporary 10-element seismic array guaranteed a continuous data recording with sufficient detectability of seismic signals at this IMS location. The selected configuration has proved successful, that the high performance as is known at GERES could be sustained during the period of construction works. A crucial prerequisite was the high data availability, which was achieved due to reliable set-up of the station equipment. Robust mobile containers housing equipment for power supply, data acquisition and transmission were installed at the individual array elements nearby the vaults, where the seismometers remained at the original position. Especially, the operation of direct methanol fuel cell systems with remote monitoring has proved as technology with high operational reliability.

Promotional text

A long outage of an IMS station due to construction works decreases the network performance. A temporary array with reduced number of elements is a beneficial alternative to sustain the operation of the station. Fuel cell systems are proved to be reliable for the power supply.

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