



Ancillary records of the Krakatau eruption and tsunami of 22 December 2018

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We examine records obtained in the regional-to-far field of the catastrophic volcanic landslide and tsunami at Krakatau on 22 December 2018. In the absence of operational DART-type sensors in that part in the Indian Ocean, we use records on horizontal long-period seismometers at a number of coastal sites: this methodology, pioneered by Yuan et al. [2005] has been successfully applied to several tsunamis, both in the far field and more recently at close distance during the 2017 Karrat Fjord, Greenland landslide. Using records at Cocos Island (COCO; 1160 km), we reconstruct an equivalent amplitude in deep water of 0.15 mm peak-to-peak, with energy peaked around 2.5 mHz.

We fail to observe hydroacoustic T phases on hydrophones of the IMS off Diego Garcia, but a weak signal is present on the seismic records at COCO and at one of the two stations of the Australian network on Christmas Island (490 km), the latter featuring energy in the 7-10-20 Hz band. Finally, the eruption is recorded as an exceptionally crisp signal by the infrasound array I06 of the IMS at Cocos Islands, with a signal peaked around 0.25 Hz. Quantified modeling of these various signals will be presented, based in particular on a combined dynamic model of the landslide and tsunami, coupled to a simulation of the water waves using a Boussinesq approximation, whose results will be compared to the deconvolved seismic record at COCO.