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Meteorological conditions effects on I33MG detection capability

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Sixty infrasound stations are installed around the world within the framework of the International Monitoring System (IMS). The purpose of these stations is the detection of a nuclear test of more than 1 kiloton, but they also detect infrasound signals from many geophysical phenomena such as ocean swells, cyclones, lightning, volcanoes...Data collected by I33MG stored at the National Data Center Madagascar since 2001 are systematically processed. Clear seasonal and diurnal variations in the number of detections are observed. We investigate the correlation between the station detection capability, local meteorological conditions such as temperature and wind, as well as high-altitude wind dynamics. Empirical laws are formulated to explain these correlations to a first order.