



Diurnal and seasonal effects of local meteorological conditions on detection capability effects of I33MG

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ARISE is a European project studying the atmospheric dynamic. Three techniques are used: infrasound, Lidar and airglow. Infrasound is used for extreme events monitoring. The purpose of this study of station detection capability is to get more in situ information for a best extreme events monitoring. I33MG is an infrasound station in Madagascar and is part of the International Monitoring System (IMS). Data collected from 2002 to 2011, especially from ocean tides, are used for the study. PMCC method is used to process infrasound data. Diurnal variation of the detection decays in the middle of day. Seasonal variation presents higher number of detection during wet season and lower during dry season. To explain these trends, local meteorological parameters (temperature and wind) are correlated with the infrasound detection. Diurnal variation correlates with the temperature and seasonal variation is controlled by the wind. When temperature and wind speed increase, the power of background noise increases and it masks parts of the signals.