

Tropical cyclones monitoring in the Indian Ocean Basin using Seismic and Infrasonic stations

Tropical cyclones occur from December to April in the South-Western of Indian Ocean. They generate both seismic and infrasonic sources, respectively secondary microseisms (SM) and microbaroms. Standing waves issued from the interaction of two swells in opposite directions with same periods generate a source of noise. Such waves generate pressure variation to the ocean floor and create seismic waves called Rayleigh waves, that may be recorded by seismic stations (at frequency band 0.1- 0.35 Hz) even at large distance (Longuet-Higgins, 1950). In the meantime, these stationary waves generate microbaroms that travel in the atmosphere and that are well recorded by infrasound stations at frequency around 0.2 Hz (Benioff & Butenberg, 1939). These two independent detections are combined to track and monitor tropical storm during their lifetime.

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