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Acoustic localization of two distinct blue whale (*Balaenoptera musculus*) subspecies in the South-West Indian Ocean

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Analysis of one year of acoustic signal recordings from the 5 permanent autonomous hydrophones of the International Monitoring System in the South-West Indian Ocean reveals low frequency with high intensity calls produced by two blue whale subspecies. The "Antarctic" or "true" blue whale (*B. m. intermedia*) calls and the "Madagascar-type" Pygmy blue whale calls (*B. m. brevicauda*) were automatically detected through the matched filtering method. The potential movements were investigated by using the time difference of arrival (TDOA) of calls to assess the bearing of the sound source. The fully range dependent parabolic equation code (RAM - Range-dependent Acoustic Model) and the PMCC code (Progressive Multi-Channel Correlation) are applied to estimate the range between our system and the vocalising animals. Our results show that 1) the variation of call number revealed two distinct patterns of seasonal whale occurrences and 2) the distances from the hydrophones to the blue whales reached up to 50 km. Tracking whales is possible when whales are concentrated of the hydrophone array.