



ATMOSPHERIC GAS-PHASE COMPOSITION OVER THE INDIAN OCEAN

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The Indian Ocean region is influenced by several unique mechanisms, such as the seasonally varying monsoon circulation. During the winter monsoon season, high pollution levels occur over the entire northern Indian Ocean, while during the summer monsoon, clean air dominates the atmospheric composition, leading to distinct chemical regimes. The changing atmospheric composition over the Indian Ocean can interact with oceanic biogeochemical cycles and impact marine ecosystems, resulting in potential climate feedbacks. I will review current progress in detecting and understanding atmospheric gas-phase composition over the Indian Ocean and its local and global impacts. Although we know that changing atmospheric composition and perturbations within the Indian Ocean affect each other, the impacts of atmospheric pollution on oceanic biogeochemistry and trace gas cycling is understudied. I highlight potential mechanisms, future research topics and observational requirements to be explored in order to fully understand interactions between the Indian Ocean and the overlying atmosphere.