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Invited Talk
(Invited Talk)
Marine heatwaves are analogues to atmospheric heatwaves and have important consequences for marine life. They are defined as prolonged periods of anomalously high sea surface temperature (SST) and can be classified as moderate, strong, severe or extreme. Various prominent events in the global ocean were identified, such as those in the Mediterranean Sea in 2003, off western Australia in 2011, in the northwest Atlantic in 2012-2014, in the northeast Pacific in 2014/15 and in the Tasmanian Sea in 2015/16. These events had devastating consequences, which ranged from extensive coral bleaching, mass mortality of marine organisms and changes in community structure to fisheries closures and quota changes. In this study, we evaluate the occurrence of marine heatwaves in the tropical and South Atlantic, their causes and impacts. In the western South Atlantic, marine heatwaves can occur simultaneously with droughts and heat waves over eastern South America with devastating socioeconomic consequences. These are compound extreme events that have the same driver and modulator, i.e., tropical convection in the Indian and Pacific oceans. In addition, we will show that an unprecedented marine heatwave event occurred in the Tropical Atlantic during austral summer of 2020, leading to a massive coral bleaching event off the northeast coast of Brazil. We will also show evidence that marine heatwaves can be linked to increasing tropical cyclone activity in the tropical North Atlantic.
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