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Icebergs with Hydro-Acoustic Arrays of the International Monitoring System

Due to low acoustic attenuation in the ocean, small acoustic events are recorded at ranges of thousands of kilometres on hydrophone arrays deployed in the SOund Fixing And Ranging (SOFAR) channel. On two arrays in the Indian Ocean, signals were identified generated by drifting icebergs that crack, disintegrate and collide. Acoustic source locations estimated from the signal bearings at the arrays are used to track two very large icebergs, C20 and B17B. Spatial and temporal correlation of the location estimates with satellite observations confirm that the icebergs can be hydro-acoustically tracked. Hydro-acoustic generation rates at both C20 and B17B are highest at times of observed break-up. For C20, which underwent continuous break-up, clusters of events to the south-east of the main iceberg suggests that hydro-acoustic observations can identify trails of icebergs that calved from the main berg whose dimensions are less than that easily resolved by moderate resolution satellite monitoring.

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