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ocean ambient noise using infrasound network

The ability of the International Monitoring System (IMS) global infrasound network to detect atmospheric explosions and events of interest strongly depends on station specific ambient noise signatures which include both incoherent wind noise and coherent infrasonic waves. To characterize the coherent ambient noise, broadband array processing has been performed on continuous IMS recordings since 2005. Obviously, ocean wave interactions contribute to the atmospheric coherent ambient noise field, therefore we apply wave action models to compute these microbarom sources. We use two-dimensional energy spectrum ocean wave products to build a global reference database of oceanic noise sources. Overall, we compare observed and modeled directional microbarom amplitudes at several stations worldwide distributed. Such studies aim to better characterize the coupling mechanisms at the ocean-atmosphere interface. In return, an improved knowledge-base on ambient ocean noise sources opens new perspectives for enhancing the characterization of explosive atmospheric events as well as for providing additional integrated constraints on middle atmosphere dynamics and disturbances in sparsely covered regions of the world.

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