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Evaluating atmospheric models in the stratosphere using oceanic infrasound ambient noise.

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Oceanic ambient noise (microbaroms) records are examined to retrieve information on the state of the middle atmosphere. We present an approach to compare ground-based infrasound observations with simulated infrasound detections obtained by combining a microbarom source model [1] with a semi-empirical attenuation law. Comparisons using this continuous and global infrasound source are presented for large time periods to assess performances on both seasonal and finer time scales. Infrasound detections obtained with a cross-correlation algorithm (PMCC) as well as with the new MCML (MultiChannel Maximum Likelihood) method [2] are considered. The sensitivity of simulated infrasound detections to the middle atmosphere model and to the propagation model (the transmission loss parametrisation) is evaluated. We discuss how this method may help to assess the performance of an atmospheric model in the middle atmosphere, as well as to select best members in an ensemble reanalysis.

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