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A Method for the Routine Analysis of Pitch-and-Roll Buoy Wave Data

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ABSTRACT

A simple, computationally efficient method is proposed as a standard procedure for the routine analysis of pitch-and-roll buoy wave data. The method yields four directional model-free parameters per frequency: the mean direction, the directional width, the skewness, and the kurtosis of the directional energy distribution. For most applications these parameters provide sufficient directional information. The estimation procedure and error characteristics of the parameter estimates are discussed and illustrated with computer simulated data. An optional interpretation of the combination of skewness and kurtosis as an indicator of uni-modality of the directional energy distribution is suggested and illustrated with field observations.

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