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**The Global Wind Resource Observed by Scatterometer**

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***Abstract***

A 27-year-long calibrated multi-mission scatterometer data set is used to determine the global basin-scale and near-coastal wind resource. In addition to mean and percentile values, the analysis also determines the global values of both 50- and 100-year return period wind speeds. The analysis clearly shows the seasonal variability of wind speeds and the differing response of the two hemispheres. The maximum wind speeds in each hemisphere are comparable but there is a much larger seasonal cycle in the northern hemisphere. As a result, the southern hemisphere has a more consistent year-round wind climate. Hence, coastal regions of southern Africa, southern Australia, New Zealand and southern South America appear particularly suited to coastal and offshore wind energy projects. The extreme value analysis shows that the highest extreme wind speeds occur in the North Atlantic Ocean with extreme wind regions concentrated along the western boundaries of the North Atlantic and North Pacific Oceans and the Indian Ocean sector of the Southern Ocean. The signature of tropical cyclones is clearly observed in each of the well-known tropical cyclone basins.

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