

Reliability applications of spatio-temporal significance height model

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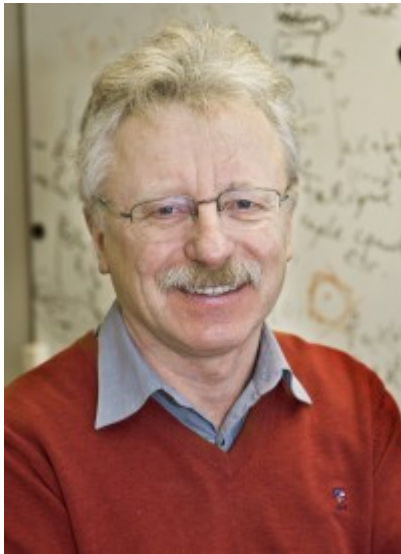


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Abstract

In the talk we shall first present a spatio-temporal random non-homogenous field used to describe variability of the significant wave height. Some aspects of statistical estimation of the model will be mentioned. Then following applications will be discussed 1) Long-term variability : Estimation of safety indexes for fatigue of a container ship sailing in North Atlantic. Estimation of 100 years H_s . 2) Medium term variability: Validation of radar measurements (confidence intervals) during a voyage . 3) Extrapolation of hindcast data to denser grid, time span of few hours and distance of 100 km.

Keywords: Spatio-temporal models, non-separable covariances, significant wave highs, fatigue damage