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Ocean Waves Workshop

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## Ocean Waves Workshop 2019 Session 4 Notes

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Raghukumar, Kaus and McWilliams, Sam, "Ocean Waves Workshop 2019 Session 4 Notes" (2019). *Ocean Waves Workshop*. 4.

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## Session 4 – Access to Reliable Information

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Coastal and nearshore regions are vital to the national economy, security, commerce, and recreation. Yet, this area is under sampled.

Historically, wave models have considered only a single representative wave described by height and period. In reality a single representative wave height does not adequately describe the wave field at sea.

The physics represented in wave models needs to be improved in order to simulate wave conditions during and at the peak of severe and extreme storms.

Operational wave modeling includes coupling, data assimilation, and ensemble forecasting.

Parameterizations are not usually valid for all possible conditions and may be a large source of considerable uncertainty in models

Costs are a driving reason for why new models with improved physics do not receive funding.

Based on issues in planning and controlling exercises, operators need to improve their knowledge on how to access historical, real-time, and forecast products.

Modelers need to understand what decisions operators make and how operators make those decisions.

A better understanding of atmospheric effects and wave breaking might help to extend the capability of acoustic modeling.

Model developers need better databases, especially seminal data sets that include extreme conditions. In addition, the formation of an objective test group can help facilitate model evaluation in extreme conditions.

A component of research to operations should include objective third party evaluation of model results.

Multi-agency investment is need to facilitate innovation in observational and modeling infrastructure.

Displays of data and model output should be intuitive for non-oceanographer end users such as fishermen and first responders.

Products should exploit current smart-phone type applications that require minimal training, communicate uncertainty, provide users with decision-making clues.