

Weakly turbulent laws of wind-wave growth for wave studies from space

Sergei I. Badulin^{1,2}, Vika G. Grigorieva^{2,3}

¹Novosibirsk State University, Russia

²P. P. Shirshov Institute of Oceanology of the Russian Academy of Science

³Moscow State University, Russia

We develop the weakly turbulent scheme of wind-wave growth (ABC of wind-wave growth presented in previous WISE meetings) as a guideline of analysis of field and satellite data. More than 20 experiments re-considered by *Badulin et al.* (2007) showed their consistency with the asymptotic model of wind-wave field where nonlinear transfer is leading physical mechanism as compared with wind input and wave dissipation. Now we extend this study by analysis of satellite data that mimics the field studies in the classic fetch-limited setup.

Altimeter data collected within the ESA initiative GlobWave are analyzed to show correspondence of the data to the weakly turbulent scenario of wave growth. This correspondence is demonstrated in terms of one-parametric dependencies of mean wave height on characteristic wave period $H(T)$ and as the Kolmogorov-like link of wave energy to total net wave input. It is shown that the weakly turbulent link can be successfully used to retrieve wave periods from altimeter data.

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References

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