

Interactive comment on “Effects of current on wind waves in strong winds” by Naohisa Takagaki et al.

Anonymous Referee #2

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This paper reports results of the laboratory investigations of the current-induced Doppler shift in wind waves at moderate to extremely high wind speeds. Experiments performed at three different tanks: Kyoto University (Japan), Kindai University (Japan), and the Institute of Applied Physics (Russia). Profiles of the wind and current velocities, and the surface wave parameters (namely phase velocity of dominant wave) were measured at all the facilities.

Results of the measurement in three different tanks are consistent provide description of the Doppler shift in the wind speeds range from 7 to 67 m/s. As found, phase velocity of dominant waves can be represented as the sum of the surface current and phase velocity estimated through the dispersion relation. The authors showed that such model is valid either for moderate and extremely high winds, even if the dominant

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waves are subjected to intensive breaking. To interpret the measurements, a weakly nonlinear model of surface waves at a shear flow is suggested.

The paper is well and clear written, it contains very interesting experimental material which after some efforts, can be applied for the open ocean conditions. I recommend to publish this paper as it is.

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