

# Space-Time Resolved Capillary Wave Turbulence Supplemental Material

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In this supplement, we present the provided movies of wave elevation and wave steepness.

Four movies are provided in the supplemental material, for Wave turbulence measurements at high and low forcing amplitude.

- **WaveFieldHigh.mpg**
- **WaveSteepnessHigh.mpg**
- **WaveFieldLow.mpg**
- **WaveSteepnessLow.mpg**

The rectangular paddle experiences a random forcing (in phase and amplitude) band-pass filtered in frequency between 4 and 6 Hz. High forcing corresponds to  $\sigma_h = 3.6$  mm and  $\sigma_s = 0.34$ , whereas for low forcing, wave field parameters are  $\sigma_h = 1.3$  mm and  $\sigma_s = 0.15$ . Movies of wave elevation  $h(x, y, t)$  are obtained by the Diffusing Light Photography method and displayed in 3D coordinate system  $(x, y, z)$ . Elevation amplitude is also depicted by a gray-level scale. The camera frame rate is 200 Hz, whereas the projection frame rate is 20 Hz, thus motion appears slowed down by a factor ten. Although free-surface dynamics are dominated at large scale by strong gravity waves especially in the forcing direction, capillary waves produced on crests of larger waves, can be observed. Then movies of wave steepness are deduced by computing spatial gradient of wave elevation  $\|\nabla h\|$  and displayed in 2D space  $(x, y)$ . The projection frame rate being again 20 Hz, the steepness field is shown using a linear colorscale. By enhancing the small scales features of wave field, dynamics of capillary waves become more visible.