

Water Waves Affect Ocean Currents, Turbulence, and Climate

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This talk will present the basic framework used in ocean modeling to estimate surface wave effects on slower, larger phenomena. The effects on two types of oceanic motions--Langmuir turbulence and fronts--will be described in detail. The impacts of wave enhancement of turbulence on the earth's climate system will be revealed through climate model simulations including and excluding this effect. The minimal information from needed from the wave state will be shown, through a statistical model of wave variability that captures most of the effects without a prognostic wave model.