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Modeling Surface Acoustic Waves on Liquid Loaded Surfaces MICHAEL MITCHELL, MATTHEW KWAN, MADELEINE MSALL, Bowdoin College — Ultrasound excitation of crystals creates acoustic waves that propagate on the surface. The wave velocities vary with directions based on the properties of the crystal. Experiments typically use ultrasound transducers submerged in water. The water loading on the surface creates a perpendicular stress. This alters the boundary conditions of the surface waves, changing their propagation. We model the phase and group velocities of Rayleigh surface waves on water loaded Si (100) and CaWO₄. The addition of water loaded boundary conditions improves the match between model and experimental data.

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