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Determination of elastic constants via phonon- imaging for crystals with low symmetry TIM HEAD, ELIZABETH CARLISLE, Abilene Christian University — We report progress toward using group velocity surface projections, rather than group velocity surfaces directly, to find elastic constants for low symmetry crystals. Direct determination of elastic constants is difficult in general because of the multi-valued nature of the group velocity surface and a lack of experimentally accessible information about phonon polarizations. Projection of group velocity surfaces onto a plane depend strongly on the elastic constants. We use Monte-Carlo simulations of phonon-images based on continuum elasticity theory to move toward a best-fit algorithm to find elastic constant values for crystals of low symmetry given phonon-imaging data.

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