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Michael E Music* (michael.music@uky.edu). *The nonlinear Fourier transform for two-dimensional subcritical potentials.*

We study the inverse scattering method for the Novikov-Veselov equation for a larger class of Schrödinger potentials than could be handled previously. Previous work concerns so-called conductivity type potentials, which have a bounded positive solution at zero energy and are a nowhere dense set of potentials. We relax this assumption to include logarithmically growing positive solutions at zero energy. These potentials are stable under perturbations. For this sufficiently smooth data of this type, we prove that the associated scattering transform can be inverted, and the original potential is recovered from the scattering data. (Received January 23, 2014)