A Simple Example of Finding Nonlocal Information using the G-Transform J. M. HENINGER, P. J. MORRISON, University of Texas at Austin — Given a time series of the distribution function at a single location, can you determine the distribution function at other location? We present a simple example, the one dimensional Vlasov equation with quasineutrality and a Lorentzian equilibrium. First G-Transform the equations of motion, then use the method of characteristics to transfer the information from the position where the time series is given to other locations, then G Transform back to the original coordinates. For this simple example, we have analytically solved for the distribution function at all positions. For more complicated situations, the procedure can be done numerically. When the equations of motion are approximate, we estimate the distance that the information can be transferred.

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