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Deniz Bilman* (dbilma2@uic.edu), Department of Mathematics, University of Illinois at Chicago, 851 S Morgan St, Chicago, IL 60607, and **Irina Nenciu**. *On the evolution of scattering data under perturbations of the Toda lattice.*

We present the results of an analytical and numerical study of the long-time behavior for certain Fermi-Pasta-Ulam (FPU) lattices viewed as perturbations of the completely integrable Toda lattice. Our main tools are the direct and inverse scattering transforms for doubly-infinite Jacobi matrices, which are well-known to linearize the Toda flow. We focus in particular on the evolution of the associated scattering data under the perturbed vs. the unperturbed equations. (Received January 19, 2015)