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**Thomas Trogdon\*** (trogdon@amath.washington.edu), Department of Applied Mathematics, University of Washington, Guggenheim Hall #414, Box 352420, Seattle, WA 98195. *A numerical Riemann–Hilbert approach for the Korteweg–de Vries equation.*

It is well known that the Cauchy initial-value problem for the Korteweg–de Vries (KdV) equation on the line may be solved with the inverse scattering transform (IST). Often, the IST is described in terms of the solution of a matrix Riemann–Hilbert problem. Building on this technique, I will describe how the construction of periodic and quasi-periodic solutions of the KdV equation can be performed with matrix Riemann–Hilbert problems. Furthermore, using a computational approach to Riemann–Hilbert problems, the IST, periodic solutions and quasi-periodic solutions are computed with uniform accuracy. (Received January 22, 2013)