1035-70-463   **Bernard Deconinck*** (`bernard@amath.washington.edu`), Department of Applied Mathematics, University of Washington, Seattle, WA 98195-2420. *The pole dynamics of rational solutions of the viscous Burgers equation.*

Rational solutions of the viscous Burgers equation are examined using the dynamics of their poles in the complex x-plane. The dynamical system for the motion of these poles is finite dimensional and not Hamiltonian. Nevertheless, we show that this finite-dimensional system is completely integrable, by explicit construction of a sufficient number of conserved quantities. The dynamical system has a class of non-equilibrium similarity solutions for which all poles have equal real part for t sufficiently large. Within the context of the finite-dimensional dynamical system these solutions are shown to be asymptotically stable. (Received September 07, 2007)

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