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**Dionyssios Mantzavinos\*** ([dmantzavinos@umass.edu](mailto:dmantzavinos@umass.edu)), Department of Mathematics and Statistics, University of Massachusetts Amherst, Amherst, MA 01003, and **Alex Himonas** ([himonas.1@nd.edu](mailto:himonas.1@nd.edu)), Department of Mathematics, University of Notre Dame, Notre Dame, IN 46556. *On the analysis of integrable evolution equations.*

The first PDE with a soliton solution was derived by Boussinesq in 1872. Several other equations followed since, including the Korteweg-de Vries, nonlinear Schrödinger and Camassa-Holm equations. All of those models are completely integrable systems and possess a variety of traveling wave solutions. During the last fifty years, the study of these equations has been intensified from analytic, geometric and algebraic points of view. In this talk, we shall discuss earlier results and recent developments on some of these equations. (Received September 14, 2016)