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Jerry L. Bona* (bona@math.uic.edu), Dept. Math. Statistics & Computer Science, University of Illinois at Chicago, 851 S. Morgan Street MC 249, Chicago, IL 60607. *The Hirota-Satsuma Equation as a Model for Shallow Water Waves*. Preliminary report.

The Hirota-Satsuma equation was formally derived as a model for long waves of small amplitude propagating on the surface of a layer of incompressible, irrotational perfect fluid. Recently, Iorio, Pilod and the author have put forward rigorous theory for this slightly odd looking evolution equation. This theory is reviewed and it is further indicated that the model does indeed approximate appropriately sized, long-crested solutions of the full water wave problem. (Received August 27, 2011)