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**David M. Ambrose\***, Department of Mathematics, 3141 Chestnut Street, Philadelphia, PA 19104, and **Jon Wilkening**. *Computation of Time-Periodic Interfacial Fluid Flows*.

We introduce a numerical method for the computation of special solutions of evolution equations. The method can be applied as long as there is an efficient method for numerical solution of the initial value problem. We apply this method to find time-periodic solutions of problems from interfacial fluid dynamics; in particular, the method has been used so far to find time-periodic solutions of the Benjamin-Ono equation and of the vortex sheet with surface tension. (Received September 01, 2009)