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Alan B Mullenix* (alan_mullenix@baylor.edu), Waco, TX 76706. *Tide Modeling: Coupled Wave Systems with a Single Dampened Layer*. Preliminary report.

Extending previous work done in the attempt to model global tide phenomena employing single waves, we introduce an N equation system of waves (along with a single dampened wave emulating turbulence off the ocean floor) with a surprisingly structured coupling matrix. Despite this structure, uncovering the sought after energy estimates require a colorful assortment of linear algebra and numerically spirited machinery. In the end, we show that a single dampened layer will drive the system energy exponentially to zero, providing solid footing to move the scheme onward into assured convergence with Finite Elements. (Received January 26, 2019)