1117-15-543   **Hashim A Saber*** (`hashim.saber@ung.edu`), 4624 Rotterdam Pl, Flowery Branch, GA 30542. *A Model Reduction Algorithm for Simulating Sedimentation Velocity Analysis.* Preliminary report.

An algorithm for the construction of a reduced model is developed to efficiently simulate a partial differential equation with distributed parameters. The algorithm is applied to the Lamm equation, which describes the sedimentation velocity experiment. It is a large scale inverse model that is costly to evaluate repeatedly. Moreover, its high-dimensional parametric input space, compounds the difficulty of effectively exploring the simulation process. The proposed parametric model reduction is applied to the simulating process of the sedimentation velocity experiment. The model is treated as a system with sedimentation and diffusion parameters to be preserved during model reduction. Model reduction allows us to reduce the simulation time significantly and, at the same time, it maintains a high accuracy. (Received January 19, 2016)