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**Michael A Karls\*** (mkarls@bsu.edu), Department of Mathematical Sciences, Ball State University, Muncie, IN 47306. *Using a Sand Tank Groundwater Model to Investigate Groundwater Flow Models.*

A Sand Tank Groundwater Model is a tabletop physical model constructed of plexiglass and filled with sand that is typically used to illustrate how groundwater water flows through an aquifer, how water wells work, and the effects of contaminants introduced into an aquifer. Mathematically groundwater flow through an aquifer can be modeled with the heat equation. We will show how a Sand Tank Groundwater Model can be used as-is or slightly modified to simulate groundwater flow through an aquifer with various boundary conditions. Data can then be collected from the physical model and used to verify the mathematical models. We will illustrate with some specific examples. (Received September 22, 2015)