1046-86-1659 **Elaine T. Spiller*** (elaine.spiller@marquette.edu), Dept of Math, Stat, and CS, Cudahy Hall, 322, P.O. Box 1881, Milwaukee, WI 53201-1881. *Constructing a Risk Map for Pyroclastic Flows: Using simulations and data to predict rare events.*

Large pyroclastic flows are rare yet potentially devastating events for communities situated near volcanoes. The volume of flow-events follows an α-stable distribution meaning that large events, which can lead to catastrophic damage, must be taken into account for civil protection purposes. We propose a method to draw hazard maps that combines field data, digital elevation maps, and flow simulations. As a test case, we focus on calculating probabilities of catastrophic damage due to flow events from the Soufriere Hills Volcano on the island of Montserrat. (Received September 16, 2008)