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**Anna Grim** and **Alona Kryshchenko\*** (alona.kryshchenko@csuci.edu), 1 University Dr, Camarillo, CA 93012, and **Linda Ness, Patricia Medina, Boris Iskra, Randy Paffenroth, Sui Tang, Megan Owen** and **Melissa Ngamini**. *Analysis of Simulated Crowd Flow Exit Data: Visualization, Panic Detection, and Exit Time Convergence, Attribution and Estimation.*

This paper describes the results of exploratory analyses of black box simulation data modeling crowds exiting different configurations of a one-story building. The simulation data was created using the SteerSuite platform. Exploratory analysis was performed on the simulation data without knowledge of simulation algorithm. The analysis effort provided a hands-on introduction to issues in crowd dynamics. Analyses focused on visualization, panic detection, exit convergence pattern discovery, identification of parameters influencing exit times, and estimation of exit times. A variety of mathematical and statistical methods were used: k-means clustering, principal component analysis, normalized cut grouping, product formula representation of dyadic measures, logistic regression, auto-encoders, and neural networks. The combined set of results provided insight into the algorithm and the behavior modeled by the algorithm and revealed the need for quantitative features modeling and distinguishing the shapes of the building configurations. (Received September 16, 2019)