

1067-Z1-2166

Rachel R Roe-Dale* (rroedale@skidmore.edu), Department of Mathematics and Computer Sci., 815 North Broadway, Saratoga Springs, NY 12866, and **Michael O'Rourke**. *A Model for Damage to Buried Segmented Pipe*. Preliminary report.

The development of an analytical model to describe seismic damage to buried segmented pipe is presented. These pipelines provide valuable infrastructure, and the investigation into the effects of seismic activity on their integrity helps predict future incidences of failure. The model presented considers the effects of ground strain parallel to the pipe axis and its effects on the pipe joints. In the development of the model we consider various parameters including pipe segment length, burial depth, and soil properties. Our results provide an analytical relationship to predict the damage rate for various parameter combinations. We then compare these results with empirical observations (repairs per kilometer) collected from various earthquakes. (Received September 22, 2010)