

1014-Z1-1717 **Long H Le*** (longle@buffalo.edu), University at Buffalo, 244 Mathematics Building, Buffalo, NY 14260. *Geophysical mass flows over erodible material.*

Geophysical mass flows such as mud flows, volcanic avalanches and landslides can sometimes erode the loose rock and soil along its way and increase their sizes up to ten times the initial. The 1998 mud flow at Casita volcano in Nicaragua caused thousands of death as eroding older deposits from the volcano. There are some models describing geophysical flow over an erodible material, but the assumption made is usually that there is no changing in erodible layer. In this talk, we will present a way to resolve this problem. We use the idea from the depth-averaging model of Savage and Hutter for the flow, and the theory of rapid flow of Savage and Jenkins for the erodible layer. By doing that, we are able to model the flows where changing the shape of the erodible layer is not negligible. We will also show some computational results based on this model against experimental data. (Received September 28, 2005)