1067-35-416   **Daniel Arrigo** and **Long H Le*** (`longl@uca.edu`), University of Central Arkansas, Department of Mathematics, Conway, AR 72035, and **Jason Torrence**. *Exact solutions for a class of 3D-ratholes in highly frictional granular solids.*

The governing equations for the stress field for Coulomb-Mohr granular solids are highly nonlinear and hence only a few analytical solutions are known. In the special case of highly frictional materials (where the internal angle of friction is ninety degrees), exact parametric solutions exist for axially symmetric ratholes in the form of wedges and cubic profiles. We will show that in the highly frictional case, these governing equations are in fact linearizable. In particular, we consider power law ratholes superimposed upon a wedge hopper base. (Received September 01, 2010)