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**Laxmi P. Paudel\*** (laxmi.paudel@asurams.edu), 1447 US Highway 19 South, Unit 1-C, Leesburg, GA 31763, and **Joseph Iaia**. *Porous Medium Equation and Its one parameter family of solutions with degenerate interface*. Preliminary report.

We reduce the porous medium equation into second order ordinary differential equation and prove the existence of one parameter family of solutions. The solution has degenerate interface that advances at a constant speed. We show that the interfaces occur under a very general initial conditions and the solutions are stable under certain class of perturbations. We also discuss the relevance of the solution to the flow of a thin layer of fluid on a horizontal surface under the action of gravity. (Received August 10, 2016)