1046-35-908   **Sridevi Pudipeddi*** (`pudipedd@augsburg.edu`), Mathematics Department, Augsburg College, 2211 Riverside Ave., Minneapolis, MN 55454. *Traveling Wave Solutions for a Nonlinear Equation which Appears in Fluid Dynamics.* Preliminary report.

We look for solutions of $y''' = f_\epsilon(y(t))$ where $f_\epsilon(y) = \frac{(|y-\epsilon)^{\frac{1}{\lambda}}}{y^{1+\frac{2}{\lambda}}} sgn(y - \epsilon)$ and $\epsilon > 0$ which comes up in fluid dynamics. We show for each $\epsilon > 0$ we find a solution which oscillates infinitely often and which goes to ϵ as $t \to \infty$. We also examine the limit of these solutions as $\epsilon \to 0$ and show that the solutions converge to a solution of $y''' = y^a$ where $a = -(1 + \frac{1}{\lambda})$. (Received September 12, 2008)