$$\frac{\partial \alpha}{\partial t} + u\frac{\partial \alpha}{\partial x} = \begin{cases} \frac{-\alpha}{\epsilon} & , \ \rho < R(u) \\ \\ \frac{((v_2 - v_1)(\rho) - \alpha)}{\epsilon} & , \ \rho \geq R(u) \end{cases} \qquad (1.3)$$