1 a) Vorticity Field

2 b) Streamline Equation

$$-\frac{t^2\ (\sinh(\text{lambdan}\, y) - \sinh(\text{lambdan y0}))}{\text{lambdan v0}\ (\sin(\text{betan}\, t) - \text{betan}\, t\ \cos(\text{betan}\, t))} - \frac{t^2\ (\cosh(\text{etan}\, x) - \cosh(\text{etan x}}{(-1)^n\ \text{etan u0}\ (\cos(\text{alphan}\, t) + \text{alphan}\, t\ s} \tag{1}$$

3 c) Pathline Equation

$$x = \frac{\operatorname{arccosh}\left(-\frac{(-1)^n \operatorname{etan}\ \mathrm{u0}\ \cos(\operatorname{alphan}\ t)}{t}\right)}{\operatorname{etan}} \tag{2}$$

$$y = \frac{\operatorname{arcsinh}\left(\frac{\operatorname{lambdan}\ \mathrm{v0}\ \sin(\operatorname{betan}\ t)}{t}\right)}{\operatorname{lambdan}} \tag{3}$$

(4)

4 d) Streakline Equation

$$x = \frac{\operatorname{arccosh}\left(-\frac{(-1)^n \operatorname{etan}\,\mathrm{u0}\,\cos(\mathrm{alphan}\,3)}{3}\right)}{\mathrm{etan}} \tag{5}$$

$$y = \frac{\operatorname{arcsinh}\left(\frac{\mathrm{lambdan}\,\mathrm{v0}\,\sin(\mathrm{betan}\,3)}{3}\right)}{\mathrm{lambdan}} \tag{6}$$

(7)

5 Tabulated Data

6 Analysis

7 Appendix