IMPERIAL

Flat domain

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Domain

- I am getting a real mode, even enlarging the domain.

Inconsistency between numerical reynolds number and theoretical one

- Since ν and U_{inf} are fixed, the only way to change the Reynolds number is by changing δ^*. So we look for a formula to calculate $\delta^*(x_1)$ based on $\delta^*(x_0)$.

We have $\delta^*(x) = C\frac{x}{\sqrt{Re_x}} = C\frac{\sqrt{x}}{\sqrt{U/\nu}}$, $C \simeq 1.72$. Thus, $\frac{\delta^*(x_1)}{\delta^*(x_0)} = \frac{\sqrt{x_1}}{\sqrt{x_0}}$. Now, we have:

If $x_1 = x_0 + \ell\delta^*(x_0)$, we have:

$$\delta^*(x_1) = \delta^*(x_0)\sqrt{1 - \ell C^2/Re_{\delta^*(x_0)}}$$