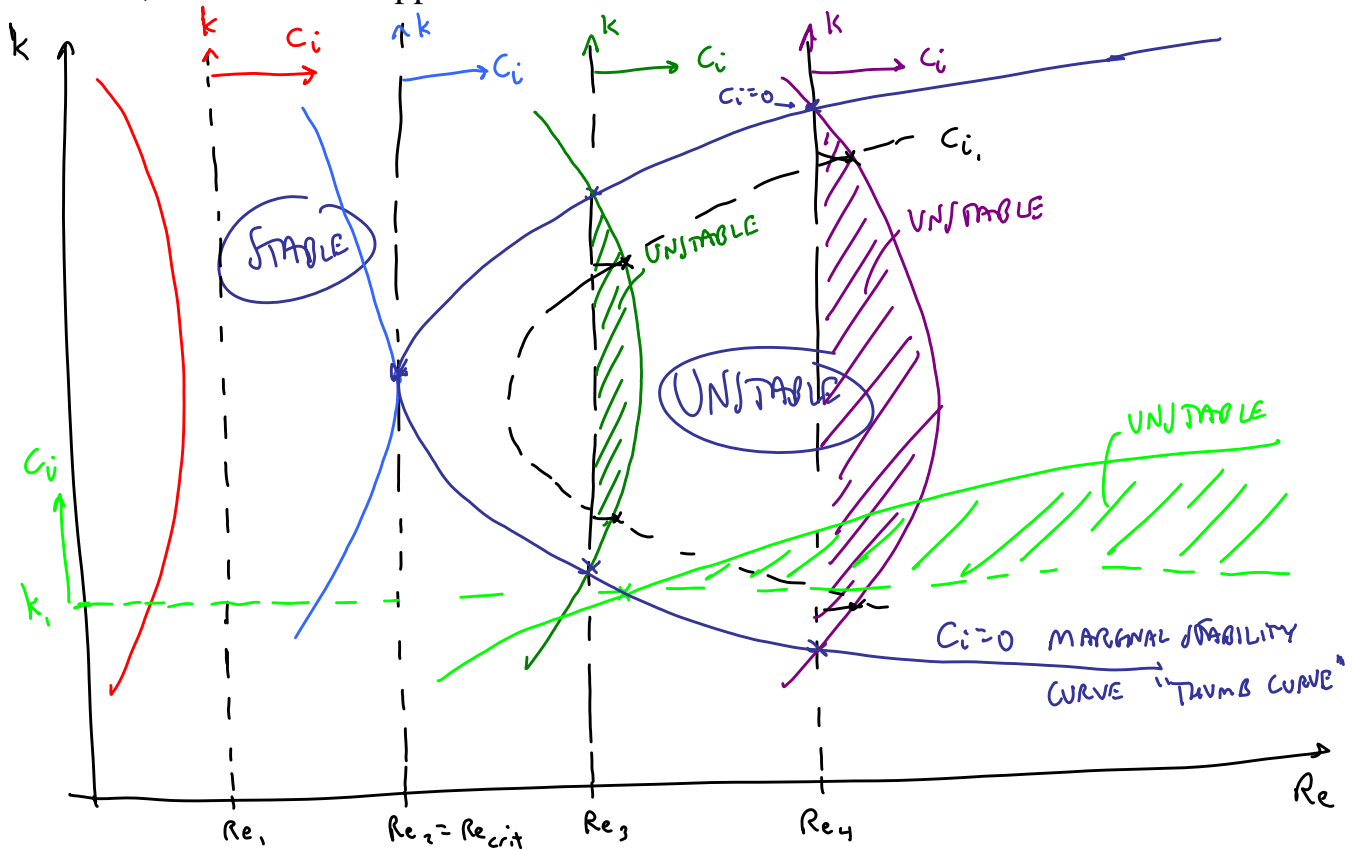
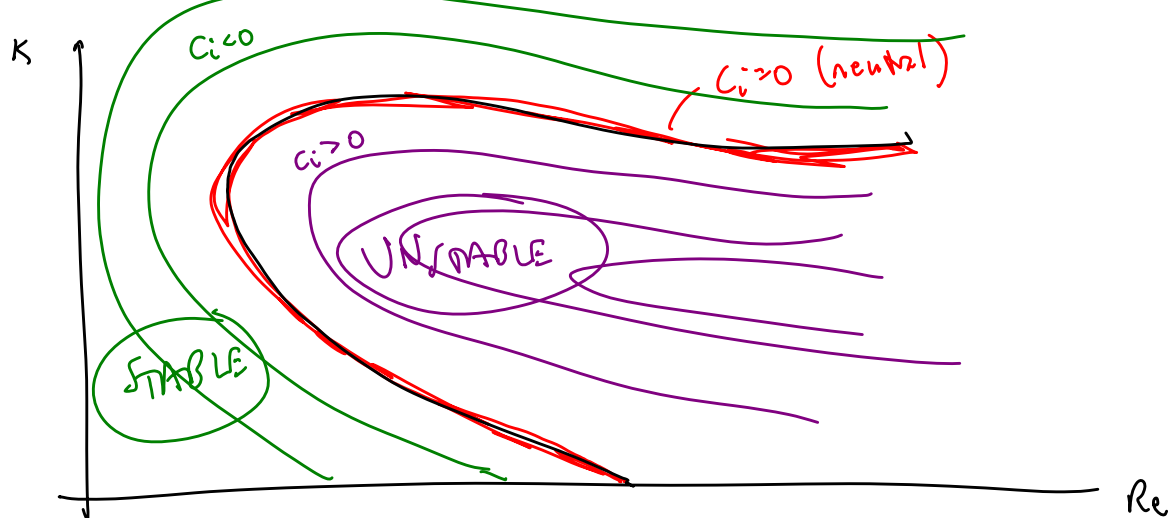


Today, we will:

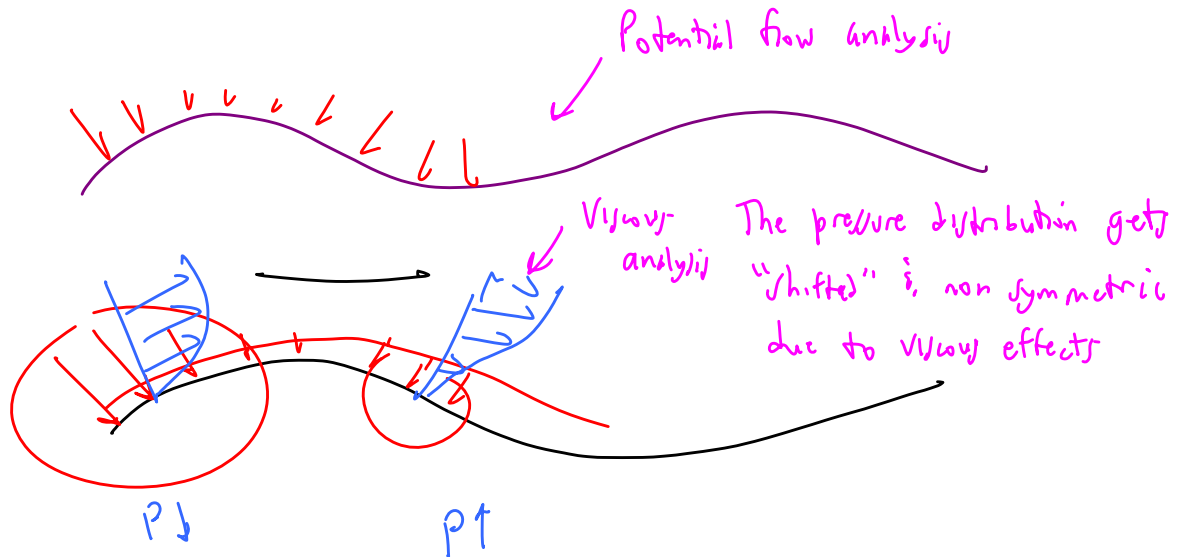
- Discuss in more detail the eigenvalue nature of the Orr-Sommerfeld equation by plotting the stability curves for temporal stability
- Show the video **Flow Instabilities** from the NSF Fluid Mechanics Films series, and discuss it
- If time, discuss what happens as $Re \rightarrow \infty$



Curves of constant C_i ($iso-C_i$ lines) can be plotted too

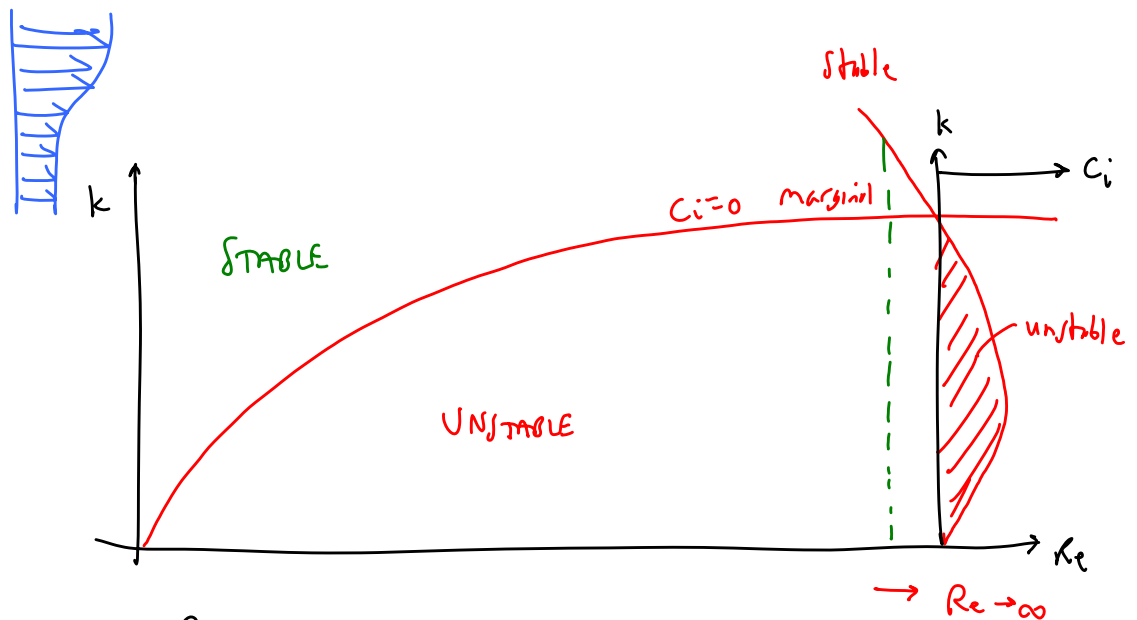


Comments from the movie:



What happens as $Re \rightarrow \infty$ Depends on the type of flow!

Example: a) 2-D mixing layer with a smooth velocity profile



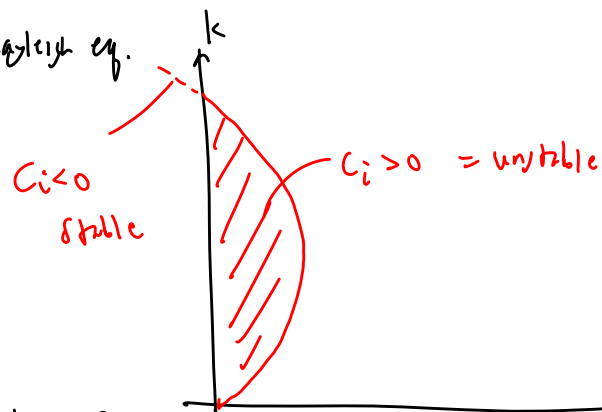
⊗ Inviscid O-S eq. = Rayleigh Eq.

↓

Ignore, neglect the viscous terms in O-S eq.

Use Rayleigh eq. for linear stability analysis

↓ Solve Rayleigh eq.



Agrees with the $O(\delta)$ solution at very high Re

Next time - we will look at other types of flows & see what the stability curve looks like, and what happens as $Re \rightarrow \infty$