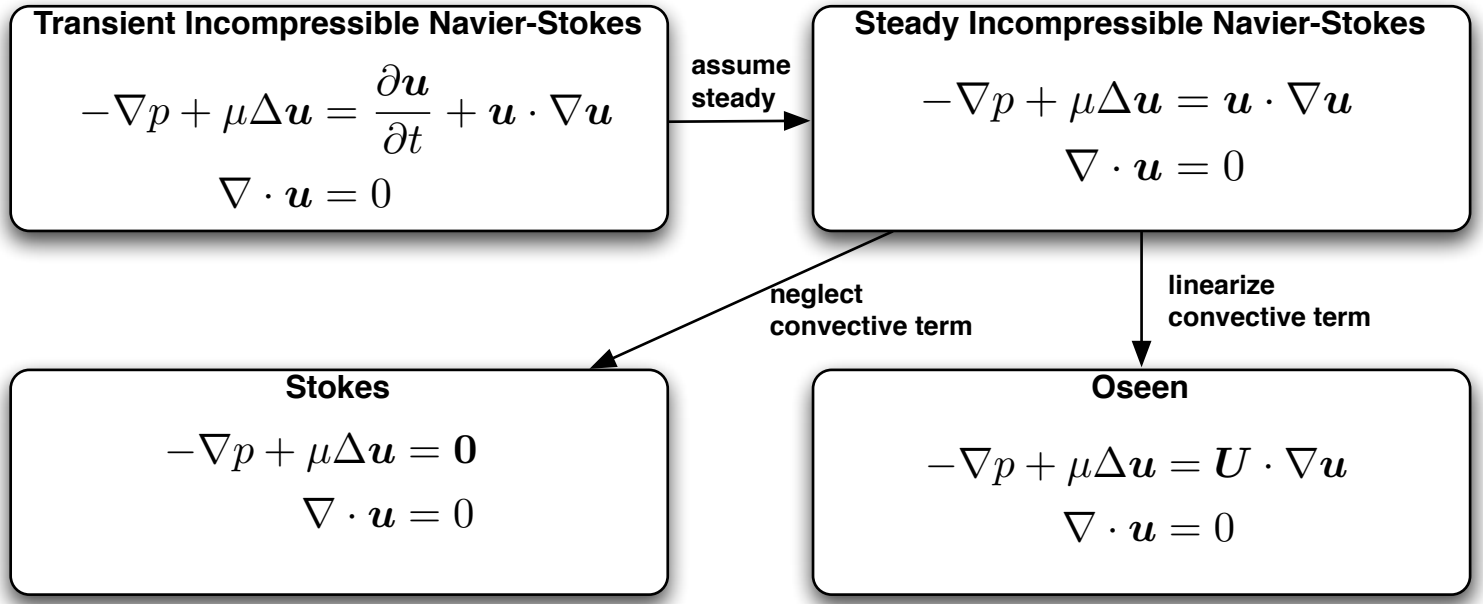
Transient Incompressible Navier-Stokes
$-\nabla p + \mu\Delta \boldsymbol{u} = \frac{\partial \boldsymbol{u}}{\partial t} + \boldsymbol{u}\cdot\nabla\boldsymbol{u}$
$\nabla\cdot\boldsymbol{u} = 0$
assume steady
Steady Incompressible Navier-Stokes
$-\nabla p + \mu\Delta \boldsymbol{u} = \boldsymbol{u}\cdot\nabla\boldsymbol{u}$
$\nabla\cdot\boldsymbol{u} = 0$
neglect convective term
linearize convective term
Stokes
$-\nabla p + \mu\Delta \boldsymbol{u} = \boldsymbol{0}$
$\nabla\cdot\boldsymbol{u} = 0$
Oseen
$-\nabla p + \mu\Delta \boldsymbol{u} = \boldsymbol{U}\cdot\nabla\boldsymbol{u}$
$\nabla\cdot\boldsymbol{u} = 0$