Phys 762 / 507 / Hassam

Problem (1)

From the linearized ideal fluid equations, about a homogeneous equilibrium [$n = n_0$, $p = p_0$, $\vec{u} = 0$], find a zero frequency normal mode which has as eigenvector ($\tilde{n}$, $\tilde{p}$, $\tilde{u}_x = 0$, $\tilde{u}_y = 0$, $\tilde{u}_z$) with $\vec{k} = \hat{z} k$ given. Find the relationship between $\{\tilde{n}, \tilde{p}, \tilde{u}_z\}$, if any. Since $p = nT$, find $\tilde{T}$ also.