

Initialize background state
 $U(z), V(z), \tau_{xz}(z), \tau_{yz}(z),$
 $v_t(z), \Phi(z),$
 $\Delta\theta, \theta_0, \gamma, z_0, \varphi, u^*, Tl_\infty,$
turbines

Initialize turbine thrust
(uniform inflow)

3LM Step

3LMR Step

Reconstruct background velocity
 $U_b(x)$

Run wake model - u^W

Run local induction model,
no self induction - u^{W+l}

Update C_T

Update turbine thrust

Turbine power

YES

Convergence
on p

NO

Coupling
iteration