

Singapore Stanford Partnership Programme

MS Project MS08-02

Desalination - Discharging Brine into Coastal Waters

Adrian Law WK

Desalination is experiencing fast growth worldwide due to the need of providing water supply to rising populations in urban cities, as well as the drastic reduction in the production cost. However, a recent assessment by the World Health Organisation (WHO) raised two major concerns on desalination, namely the high energy cost and the potential environmental impact due to the large quantity of concentrated brine rejects. The environmental impact can be assessed by analyzing the mixing pattern of the brine when it is discharged in the water body. In this project, we shall attempt the analysis using mathematical approaches, as well as numerical simulations with advanced turbulence model such as the Large Eddy Simulation. Student for this project needs to have an interest and background both in fluid mechanics and mathematics.