CHE 4253

ASSIGNMENT 7

Due Nov 10 (in groups of 4).

Consider the earth as composed of three subsystems (land masses, oceans, atmosphere). Write the unsteady state material balance equation for CO2 for each subsystem. In the case of oceans, assume CO2 dissolves in water forming carbonic ionic species. In the case of land masses, assume vegetation absorbing CO2 and CO2 industrial emissions. Then use an energy balance for the earth with and without CO2 greenhouse industrial emissions and compare. You can consider the ocean and the atmosphere well mixed or not (you decide what is appropriate). Use the literature to look for all the parameters you need for this model. A Chemical Engineering perspective of the problem (Dr. Seinfeld) is posted, but there are others.

PPT submitted via e-mail to me by the deadline. Oral presentation limited to (10 minutes), no later than Nov 14. All students must be familiar with the Seinfeld paper and the model that is being presented.