Modeling of raceway pond for microalgae cultivation

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In this research, a new modeling approach for dynamics of raceway pond, which cultivate microalgae, is proposed. Nowadays many researchers make efforts to produce biodiesel from renewable biomass, which uses microalgae. However, this biodiesel has higher production cost than fossil fuel owing to biomass cultivation and harvest cost. To decrease production cost many studies consider raceway pond, which has advantages like mass production and using sunlight. Although raceway pond has large potential, there are few researches on modeling for raceway pond because it has huge variables, microalgae growth, hydrodynamics, light, etc. In our work, we propose model for raceway pond. By using proposed model, we can predict biomass production with more practical cultivation conditions.