

colloquium

Advection-dispersion-reaction systems modeling the dynamics of harmful algae in flowing habitats

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時 間：102 年 10 月 16 日（三） 2：30 pm

地 點：應用數學系多媒體教室（理 408 室）

摘 要：

Blooms of golden algae have been identified in fresh and brackish water environments. Blooms in Texas have affected over 20 reservoirs in five river basins, killing over 17.5 million fish with economic losses of several million dollars. In order to mitigate harmful algal blooms and their effects in river systems, it is important to understand the persistence of algae in the presence of flow and the spatial variation. In this talk, we shall study advection-dispersion-reaction systems arising from the dynamics of harmful algae in flowing-water habitats where a main channel is coupled to a hydraulic storage zone, representing an ensemble of fringing coves on the shoreline. Since some equations in our systems have no diffusion terms, we need to overcome the lack of compactness of solution maps of the full system and the associated linearized system, respectively.