日時：２０１４年１１月５日(水)(12:10 – 12:50)

場所：中野キャンパス8階　談話室

Model aided understanding of harmful algal blooms

Tommaso Scotti　(Meiji Univ. MIMS)

Blooms of freshwater cyanobacteria are a worldwide spread environmental issue. In fact, some cyanobacteria can produce a variety of toxins that are harmful to a wide range of organisms, including humans. Therefore, monitoring and understanding the dynamics of harmful algal blooms is tremendously important because of their potential impact on drinking and recreational waters.

Despite toxin producing planktonic species are generally expected to be poor competitors for resources, dense blooms of toxic cyanobacteria, such as *Microcystis*, do often occur in nature. We employ a Lotka-Volterra reaction-diffusion system in order to investigate the coupled role of toxicity and zooplankton's predation in the persistence of the toxic species, and to study the mechanisms behind the formation of spatially local toxic blooms. We show that the presence of a toxic prey may destabilize the spatially homogeneous coexistence and trigger the formation of spatial patterns. We also show that local blooms more likely occur when predators avoid the toxic prey and the toxicity is at an intermediate level.

問い合わせ：

近藤　信太郎

Email: tz13023@meiji.ac.jp

MIMS