

MEセミナー

九州大学
数理生物学
研究室

Date: 2013 April 10th [Wed]

Place: the room 3631

Axel. G. Rossberg (Queen's Univ.) 13:30- **“The role of demographic stochasticity for the formation of species”**

In individual-based models of competing, reproducing, and evolving organisms one finds that, with high mutation rates, organisms fill nichespace evenly rather than being assignable to ecologically distinct species. We analyzed mathematically the general conditions under which this even filling gives way to species formation. Surprisingly, the transition is driven by demographic stochasticity, implying that for numerically highly abundant organisms it can be suppressed. Indeed, we find indications for the breakdown of species formation in environmental genetic data sets for small, abundant organisms.

Nao Takashina (Kyushu Univ.) 15:00- **“Theoretical investigations into effective methods for the marine ecosystem management”**

In recent years a number of marine protected areas (MPAs) aimed at restoring fishing stocks and ecosystem managements have been established. Yet, consensus about creating processes of MPAs (e.g., preliminary observation or configuration of MPAs) has not been gained. In this talk I suggest a method for deciding a mesh size in geographic assessments before the creation of MPAs. Selective fisheries may cause larger impacts on marine ecosystems than unselective fisheries (Garcia et al. 2012). However, bycatch, which is inevitable especially for multispecies fisheries, has also serious impact on sustainable fisheries and marine ecosystem. I investigate impacts of bycatch on marine ecosystems and discuss the way to address this problem.

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