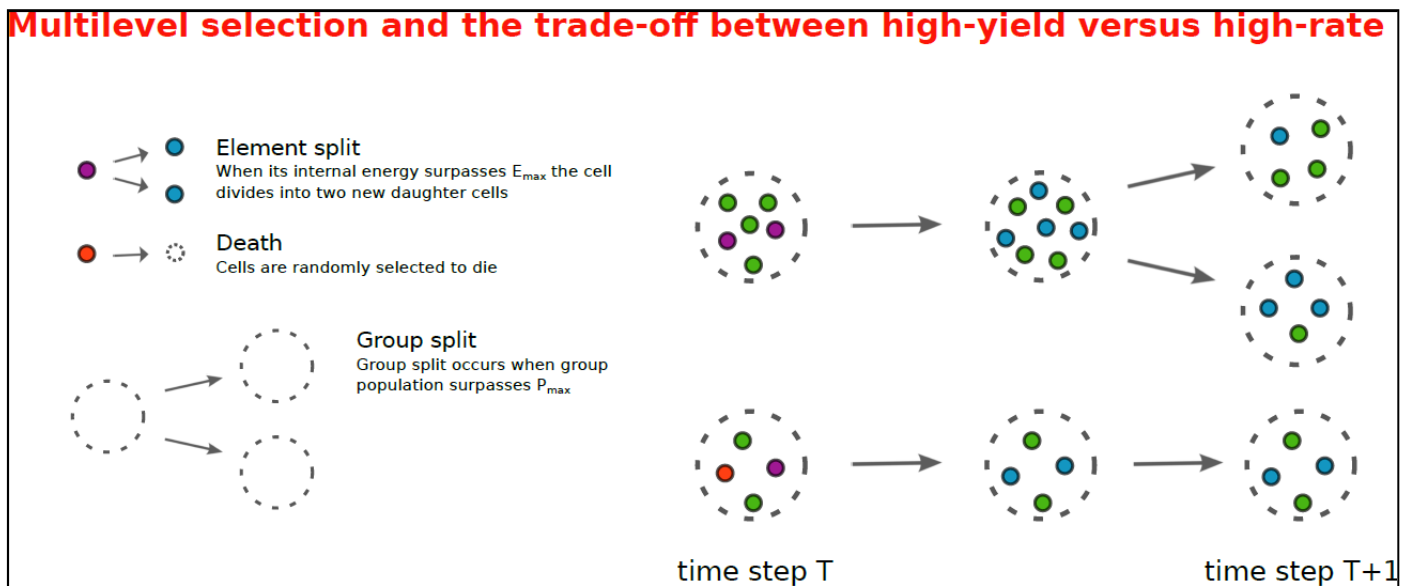


EcoEncontros Convida:

Paulo Campos

Professor Associado, Departamento de Física, UFPE

“Resource-based modeling in evolutionary game theory”



Sexta-feira, 26 de junho, às 13:15h

AG da Zoologia - IB (USP)

The evolution of cooperation is one of the most intriguing conundrum in evolutionary biology. Natural selection favours traits that increase individual's ability to reproduce or survive. One individual is said to be cooperative if it provides a benefit to another individual or to a group at the expense of its own relative fitness. According to evolutionary theory such cooperative behaviour is detrimental to the individual and should be counter-selected. Instead, the selfish behaviour is expected to arise and invade in a group of cooperators. However, cooperation is observed everywhere. Despite the great attention the issue has received in the last decades our understanding about the underlying mechanisms that explain the emergence and maintenance of cooperation is still poor. Here we combine the frameworks of resource-based modeling and evolutionary game theory to study the conditions under which cooperative strains can thrive. In the talk we will present our recent studies for the evolution of cooperation within the context of multilevel selection, where individuals (cells) are organised into groups. Selection occurs at both individual and group levels. Selection in the group level stems from differentiated growth rates that vary according to the group's composition. This approach can be related to the problem of the emergence of multicellular form of life.