

## COE統合数理科学特別セミナー

Speaker : **Prof. Michael Keane**  
(Wesleyan University)



Date : **June 5, 2007 (Tuesday)**

Time : **16:30 - 18:00**

Place : **14-218 (Discussion Room 8)**  
**2nd Floor, Bldg. 14**  
**Faculty of Science and Technology**  
**KEIO University**

### The Mathematics of Contention Trees

In this lecture, we explain to the listener what a contention tree is, and we develop some of the mathematical results, both with and without proofs, concerning contention trees. Contention trees arise in a number of practical situations. For example, if a large number of stations wish to share using a small number of communication lines, and if the stations are unable to communicate with each other, then a contention tree algorithm is often used: each station selects randomly a line and attempts communication; if this is unsuccessful because of collision, then again a random subdivision takes place among the attempts on a given line, and so forth until all messages have been sent. The mathematics contains some unexpected results which raise also a number of theoretical problems not yet fully understood.