

DEPARTMENTAL SEMINAR

Friday 21st October 2005, 11:00am
Room **CS1.01**, Department of Computer Science

“Safety Metric Temporal Logic is Fully Decidable”

Speaker:

James Worrell
(University of Oxford)

Abstract:



Metric Temporal Logic (MTL) is a widely-studied real-time extension of Linear Temporal Logic. In this talk we consider a subset of MTL, called **Safety MTL**, capable of expressing properties like **invariance** and **time-bounded response**. We show that Safety MTL is fully decidable in that the associated satisfiability, validity and model checking problems are all decidable. These are the **first positive decidability results for MTL** that do not involve restricting the precision of the timing constraints or the granularity of the semantics. Underlying these results is an algorithm for deciding language emptiness over timed omega-words for a class of timed alternating automata.