



**Department of Mathematics, Statistics and Computer Science
St. Francis Xavier University
Presents**

**Power-Aware Fixed Priority Real-Time Scheduling for
Multicore Processors**

by

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As a result of the demand for more computing power, multicore systems are widely used nowadays. From desktop computers to laptop computers, from embedded devices (e.g. cellular phones and PDAs) to large clusters, all of these platforms have been affected by the multicore architecture. Two challenges have also been brought up. First, due to increased system complexity, it is harder for real-time applications to predict program behavior. Second, energy consumption and heat production are becoming more and more critical. A lot of research has been done to make the real-time applications running on multicore systems more predictable and to guarantee no deadline miss. These studies include worst case response time (WCRT) analysis, task set scheduling algorithms, etc. On the other hand, not many researchers study the energy consumption problem for multicore systems. In this work we propose a novel real-time fixed-priority energy-aware scheduling algorithm on for a multicore processor. This algorithm employs state-of-the-art single core processor energy-aware algorithms and the previous work of multi-core assignment/workload-balancing algorithms together to reach a fair energy saving.

Refreshments will be served before the talk in AX24A