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Automatic  
Control and  
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Engineering

The Department of Automatic Control & Systems Engineering  
is pleased to announce the following seminar:

## **Particle Filtering for Network-Based Positioning in Terrestrial Radio Networks**

**Dr Fredrik Gunnarsson**

*Ericsson Research and Linköping University*

**Monday 28<sup>th</sup> April 2014 at 11:00**

LT01, Sir Henry Stephenson Building

### **Abstract**

There is strong interest in positioning in wireless networks, partly to support end user service needs, but also to support network management with network-based network information. The focus in this talk is on the latter, while using measurements that are readily available in wireless networks. We show how the signal direction of departure and inter-distance between the base station and the mobile terminal can be estimated, and how particle filters and smoothers can be used to post-process the measurements. The methods are evaluated in a live 3GPP LTE network with promising results including position error medians of less than 100 m.

### **Biography**

Fredrik Gunnarsson received the M.Sc. and Ph.D. degrees in electrical engineering from Linköping University, Sweden, in 1996 and 2000 respectively. His research interests include signal processing and automatic control aspects of radio resource and network management, as well as mobile localization. Currently, he is active in various SON activities both academically like the initiative with the IWSON series, as well as industrially with work on SON towards 3GPP. In 2001 he joined Ericsson and is now Senior Specialist in Radio Network SON at Ericsson Research as well as an Associate Professor at Automatic Control, Linköping University.

*Refreshments will be available following the talk in the  
Foyer of the Sir Henry Stephenson Building*