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

Constructive Solutions for Differential Games

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Wednesday, 18 November 2015 at 14:00

LT2, The Diamond

Abstract

A wide variety of problems can be described and studied using the framework provided by differential game theory. We focus on a class of nonzero-sum, infinite horizon differential games. Obtaining solutions for such problems involves solving a system of coupled partial differential equations and, in general, closed-form solutions to these cannot be obtained. For this reason, it is often necessary to settle for approximate solutions.

A systematic method for constructing approximate solutions without solving partial differential equations is presented and demonstrated by means of a variety of numerical examples. The examples highlight several possible areas of applications: competitive biological systems, multi-agent systems and power systems. The main ideas are then applied to the solution of the so-called coverage problem and to a class of mean field games.

Biography

Thulasi Mylvaganam was born in Bergen, Norway, in 1988. She received the M.Eng. degree in electrical and electronic engineering from Imperial College London, UK, in 2010. In 2014 she completed her Ph.D. degree with the Control and Power research group at the department of Electrical and Electronic Engineering, Imperial College London, where she is currently a postdoctoral research assistant. Her research interests include nonlinear differential games and their applications, mean-field games and multi-agent systems. She has recently also been working on differential games with limited communication.