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

Optimal Boundary Control Problems of Parabolic Systems with Delays

Professor Adam Kowalewski
*Faculty of Electrical Engineering, Automatics, Computer Science and Electronics
AGH University of Science and Technology,*
Kraków, Poland

Wednesday, 28 November 2018 at 14:00
Sir Henry Stephenson Building, LT02

Abstract

In the lecture, we consider an optimal boundary control problem for a linear parabolic system in which time delays appear in the integral form both in the state equation and in the Neumann boundary condition. Sufficient conditions for the existence of a unique solution for such parabolic system is presented. The performance functionals have quadratic form. The time horizon is fixed. Finally, we impose some constraints on the boundary control. Making use of Lion's framework necessary and sufficient conditions of optimality are derived for a linear quadratic problem. A simple example of application is also provided.

Biography

Professor Adam Kowalewski was born in Cracow, Poland, in 1949. He received his M.Sc. degree in electrical engineering, and his Ph.D. and D. Sc. degrees in control engineering, from the AGH University of Science and Technology in Cracow in 1972, 1977 and 1992, respectively. At present he is a Full Professor of Automatic Control and Optimization Theory in the Faculty of Electrical Engineering, Automatics, Computer Science and Electronics at the AGH University of Science and Technology. Professor Kowalewski is the author or co-author of numerous original research papers on optimal control of time-delay distributed parameter systems which have been published in well-known international and national journals and books. He was a session chairman and an organizer of invited sessions at many international conferences and symposia. His research and teaching interests include control and optimization theory, biocybernetics and signal analysis and processing. He has held numerous visiting positions, including Visiting Researcher at the International Centre for Pure and Applied Mathematics in Nice, France, International Centre for Theoretical Physics in Trieste, Italy, Scuola Normale Superiore in Pisa, Italy, and the Department of Mathematics at the University of Warwick in Coventry, Great Britain.