

Séminaire du LOOP

Mercredi le 28 octobre 2015 à 10h30 au local PLT-1120

Présentateur : Prof. Daniel Sbarbaro (Universidad de Concepción, Chili)

Titre : Process control using Electrical Impedance Tomography

Résumé : Sensor based on Electrical Impedance Tomography has been developed to address the need of nonintrusive measurements for a wide range of applications such as: sedimentation, mixing, interface detection and concentration distribution. Controlling a process based on tomographic measurements is a challenging problem since the system is highly nonlinear, high order and ill-posed. Thus efficient and effective control and estimation algorithms are required to address the application of tomographic technologies in process control. Several authors have proposed to address this problem by using linear approaches, but their performance is limited by the linear assumption. This work, however, proposes the use of the nonlinear model to predict the system output, and solve a control and nonlinear state estimation problem based on the receding horizon principle. A simple simulation example illustrates the performance and effectiveness of the proposed approach.