



**Communautés de Compétence
Technique**

**CCT SCA – Systèmes de Commande
et Automatique**



Séminaire

Applications de la commande structurée

27 novembre 2014 (09h15 – 17h15)

**Institut Aéronautique et Spatial (IAS)
23 Avenue Edouard Belin, 31028 Toulouse, cedex 4**

L'objectif de ce séminaire est de faire un point sur le transfert industriel dans le domaine de l'aéronautique et spatial des outils et méthodes de synthèse de correcteurs structurés, basés sur les méthodes d'optimisation non lisses ou autres. Les nouveaux développements des outils seront aussi présentés.

.....

Pour assister à ce séminaire, inscrivez-vous sur le site :
<http://cct.cnes.fr>

Inscriptions : <http://cct.cnes.fr>

Informations complémentaires : Christelle.Pittet@cnes.fr



**Communautés de Compétence
Technique**
**CCT SCA – Systèmes de Commande
et Automatique**



Programme

09h15-09h30	Accueil
09h30-10h30	Tuning Controllers Against Multiple Design Requirements using Constrained Nonsmooth Optimization Pierre AKPARIAN (ONERA)
10h30-11h00	Apport de la synthèse H-infini structurée à la commande de robots manipulateurs en environnement inconnu Neil ABROUG (CEA)
11h00-11h15	Pause
11h15-11h45	Robust GNC design for decommissioned satellite deorbiting Alexandre FALCOZ (Airbus DS)
11h45-12h15	Estimateurs Accéléro-stellaire structurés pour Microscope Christelle PITTET (CNES)
12h15-13h45	Repas
13h45-14h30	Two applications of structured synthesis aiming at better robustness or transient behaviour : the COROT experiment and design of a Pulse-controlled Drag-Free System Adrien GRYNAGIER (TAS)
14h30-15h00	Towards structured H infinity Synthesis for flexible launcher Martine GANET (Airbus DS) <i>This paper deals with one of the first step of the industrial process of the application of structured H^∞ synthesis for launcher control during atmospheric flight phase. In this study, the feasibility of structured H^∞ control design was demonstrated on a benchmark representative of launcher control during steady state ascent phase. Thanks to an incremental approach performance improvements of structured H^∞ controller were also highlighted with respect to baseline H^∞ controller. Improvement axes that still necessitate further researches before envisaging real application of structured H^∞ framework for launcher control were identified; these perspectives are</i>

Inscriptions : <http://cct.cnes.fr>

Informations complémentaires : Christelle.Pittet@cnes.fr



Communautés de Compétence Technique

**CCT SCA – Systèmes de Commande
et Automatique**



<http://cct.cnes.fr>

	<i>currently under investigation in the frame of cofounded researches in collaboration with CNES and ONERA.</i>
15h00-15h30	Contrôle micro-vibratoire AD (IMS)
15h30-15h45	Pause
15h45-16h15	Evolutionary Fixed-Structure H^∞ synthesis for Multiple Plants Philippe FEYEL (SAGEM)
16h15-16h45	Integrated Design and Control of a Flying Wing Yann Denieul (ISAE) <i>In this paper we consider the problem of simultaneously stabilizing a civil flying wing aircraft and optimizing the control surfaces physical parameters, such as control surfaces sizes and actuators bandwidth. This flying wing configuration is characterized by unstable longitudinal modes, badly damped lateral modes, and a lack of control efficiency despite large movables. The question is then to determine the energy penalty associated to the control of these unstable modes, and then to optimize the control surfaces architecture in order to minimize the control-associated energy. Our approach uses latest nonsmooth optimization techniques, which allows more possibilities on requirements specifications and controller structure compared to other approaches such as LMI-based optimizations.</i>
16h45-17h15	Table ronde

Inscriptions : <http://cct.cnes.fr>

Informations complémentaires : Christelle.Pittet@cnes.fr