

Travaux de recherche de J-C. MARE

Thèse

MARE J-C., *Contribution à la modélisation, la simulation, l'identification et la commande d'actionneurs électrohydrauliques*, Thèse de Doctorat d'Etat, Université Claude Bernard, Lyon I, 6 Juillet **1993**.

Encadrement de thèses

- 22/17.3 MONSIMER Adrien, *Méthodologie pour l'étude conceptuelle d'un système fortement innovant - Application au cas du circuit carburant d'un moteur d'hélicoptère*, Première inscription 5 Mai 2015, soutenance 19 Avril **2018** (100%).
- 21/16.3 COIC Clément, *Model-Aided Design of a High-Performance Fly-by-Wire Actuator, Based on a Global Modelling of the Actuation System using Bond-graphs*, Première inscription 25 Novembre 2013, 1 Décembre **2016** (100%).
- 20/15.3 FU Jian, *Virtual Prototyping of Electromechanical Actuators for Position Synchronization*, Première inscription 15 mars 2013, 6 Juillet **2016** (100%).
- 19/14.3 GNESI E., *Prototypage virtuel de modules électro-hydrostatique à pompes à palettes - Application aux presses à injecter*, Première inscription 15 Février 2012, 21 Septembre **2015** (100%).
- 18/13.3 REYSSET Aurélien, *Conception préliminaire d'actionneurs électromécaniques - outils d'aide à la spécification et à la génération de procédures de dimensionnement pour l'optimisation*, 1ère inscription Décembre 2011, 23 Janvier **2015** (10%).
- 17/13.2 FRAJ Amine, *Nouvelles approches en conception basée sur les modèles des actionneurs embarquées*, Institut National des Sciences Appliquées de Toulouse, Première inscription 10 Juillet 2011, 26 Mai **2014** (50%).
- 16/12.7 VINSON Garance, *Développement d'une méthode de diagnostic et pronostic basée sur un cadre formel de modélisation générique. Application à un module électro-hydrostatique aéronautique*, Université Paul Sabatier, Première inscription 1/2/11, 21 Février **2014** (30%).
- 15/12.4 WANG Lijian, *Stratégie d'égalisation d'effort dans les systèmes d'actionnement actif-actif impliquant les technologies servo-hydraulique et électro-mécanique*, Institut National des Sciences Appliquées de Toulouse, Première inscription 1er janvier 2009, 18 Décembre **2012** (100%).
- 14/11.4 FAUGERE Emeline, *Modélisation couplée des pertes mécaniques et du comportement thermique d'un réducteur de transmission de puissance par engrenage par réseaux nodaux multi-niveaux*, Institut National des Sciences Appliquées de Toulouse, 1ère inscription 1er Décembre 2009, 10 Décembre **2012** (100%).
- 13/10.4 HOSPITAL Fabien, *Conception préliminaire des actionneurs électromécaniques basée sur les modèles. Lois d'estimation et règles de conception pour la transmission de puissance mécanique*, Institut National des Sciences Appliquées de Toulouse, 22 Octobre **2012** (50%).
- 12/9.9 EL HALABI Toufic, *Méthodologies pour la conception optimale des systèmes d'actionnement électromécaniques*, Institut National des Sciences Appliquées de Toulouse, 22 mars **2012** (50%).
- 11/9.4 MARGER Thibault, *Conception d'une servocommande hydromécanique sous critère de coût et de mixabilité*, Art et Métiers, 13 Décembre **2010** (40%).
- 10/9 QI Haitao, *Research on Actuation System Architecture of More Electric Aircraft and Electro-Hydrostatic Actuator (EHA)*, Encadrement à 50% (50% Pr Fu) de Septembre 2007 à Décembre 2009, 30 Janvier **2010**.
- 9/8.5 LISCOUËT Jonathan, *Conception préliminaire des actionneurs électromécaniques : Approche hybride, directe/inverse*. Institut National des Sciences Appliquées de Toulouse, 4 Janvier **2010**, inscription 01/02/2007 (50%).
- 8/8 LISCOUËT-HANKE Susan, *A model-based methodology for integrated preliminary sizing and analysis of aircraft power system architecture*, Institut National des Sciences Appliquées de Toulouse, 21 Octobre **2008**, inscription 20/10/2005 (100%).
- 7/7 ATTAR B., *Modélisation réaliste en conditions extrêmes des servovalves électrohydrauliques utilisées pour le guidage et la navigation aéronautique et spatiale*, Institut National des Sciences Appliquées de Toulouse, 8 janvier **2008** (100%).
- 6/6 VELAZQUEZ G., *Prototypage virtuel des boîtes de vitesses automatiques - Application à une pompe à palettes à cylindrée variable*, Doctorat de l'Université de Toulouse, 12 Juillet **2008**, inscription 16/10/2003 (100%).

- 5/5 KARAM W., *Générateurs de forces statiques et dynamiques à haute puissance en technologie électromagnétique*. Institut National des Sciences Appliquées de Toulouse, 30 Novembre **2007** (100%).
- 4/4 NFONGUEM G., *Contribution au développement d'actionneurs plus électriques - Modélisation inverse et composants mécaniques spécifiques à une application aéronautique.*, Institut National des Sciences Appliquées de Toulouse, **2006** (100%).
- 3/3 BERTHE P-E., *Développement d'outils de modélisation et de caractérisation de combinés de suspension oléopneumatiques à surface libre*, 16 Décembre **1999** (100%).
- 2/2 GEIDER O., *Modélisation et commande d'un actionneur pneumatique faible cout*, 16 Décembre **1999** (100%).
- 1/1 BAUDRY X., *Couplage entre approches globales et locales CFD pour la conception d'organes hydrauliques*, 16 Décembre **1999** (100%).

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- 26 MARE J-C., *Best practices for model-based and simulation-aided engineering of power transmission and motion control systems*, Chinese Journal of Aeronautics, ISSN 1000-9361, <https://doi.org/10.1016/j.cja.2018.07.015>, Available online 18 August **2018**.
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- 24 MARE J-C., FU J., *Review on signal-by-wire and power-by-wire actuation for more electric aircraft*, Chinese Journal of Aeronautics, Vol 30, N°3, pp 1-14, doi.org/10.1016/j.cja.2017.03.013, **2017**.
- 23 FU J., MARE J-C., FU Y., *Incremental Simulation-Based Design of Mechanical Power Transmission Architectures Applied to Aerospace Electromechanical Actuators*, Journal: Journal of Mechanical Design - Transactions of the ASME, November **2016**.
- 22 FU J., MARE J-C., FU Y., *Modelling and simulation of flight control electromechanical actuators with special focus on model architecting, multidisciplinary effects and power flows*, Chinese Journal of Aeronautics, Available online 7 November **2016**.
- 21 MARE J-C., *Requirement-based system-level simulation of mechanical transmissions with special consideration of friction, backlash and preload*, Simulation Modelling Practice and Theory, Volume 63, Pages 58–82, DOI: 10.1016/j.simpat.2016.01.005, April **2016**.
- 20 HAZYUKA I., BUDINGER M., SANCHEZ F., MARE J-C., COLIN S., *Scaling laws based metamodels for the selection of the cooling strategy of electromechanical actuators in the early design stages*, Mechatronics, [doi:10.1016/j.mechatronics.2015.05.011](https://doi.org/10.1016/j.mechatronics.2015.05.011), **2015**.
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- 15 WANG L., MARE J-C., *A Force Equalization Controller for Active/Active Redundant Actuation System Involving Servo-hydraulic and Electro-mechanical Technologies*, Proceedings of the Institution of Mechanical Engineers, Part G: Journal of Aerospace Engineering, October 7, 2013 0954410013504343, **2013**.
- 14 MARE J-C., *Friction modelling and simulation at system level: a practical view for the designer*, ImechE part I, Journal of Systems and Control Engineering, Vol 226, N°6, pp. 728 - 741, DOI 10.1177/0959651812441749, July **2012**.
- 13 LISCOUET J., MARE J-C., BUDINGER M., *An integrated methodology for the preliminary design of highly reliable electromechanical actuators: Search for architecture solutions*, Aerospace Science and Technology 22, pp 9–18, **2012**.

- 12 BUDINGER M., LISCOUET, J., MARE, J-C., *Estimation models for the preliminary design of electromechanical actuators*, Proceedings of the Institution of Mechanical Engineers, Part G: Journal of Aerospace Engineering, 0954410011408941, October 19, **2011**.
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- 15 MARE J-C., *Best practices in virtual prototyping - Application to electromechanical actuators*, Salon International de l'Aéronautique et de l'Espace, Paris, 15 Juin **2015**.
- 14 MARE, J-C., *Best practices in modelling and simulation applied to aerospace electromechanical actuators*, 2015 European Aerospace Engineering Conference, Toulouse, 11-12 mars **2015**.
- 13 MARE, J-C., *Implementation of mechanical quadriports in AMESim for the virtual prototyping of electromechanical actuators*, LMS European Aerospace Conference, Toulouse, 5 Octobre **2012**.
- 12 MARE, J-C., *Historical Evolution and Challenges in Aerospace*, Invited keynote lecture, Actuator 2012, Bremen 18-20 June **2012**.
- 11 MARE J-C., *AMESim for education and research in Aerospace Actuation - 12 years of experience*, LMS European Aerospace Conference, Toulouse, 06 Octobre **2011**.
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- 9 MARE J-C., *Energy, environment and sustainable development within the commercial air transport*, Key lecture at the Symposium on Energy – Environment – Components of Sustainable Development, the Romanian Academy, Bucharest, 14 May **2008**.
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