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1 Experience

- **Researcher** [postdoctoral fellow, 1-May-2012 – 31-October-2012; postdoctoral employee, 1-November-2012 – present], Vakgroep Toegepaste Mechanica (Department of Mechanical Engineering), Vrije Universiteit Brussel (VUB), Belgium.
- **Researcher** [postdoctoral employee, 8-June-2009 – 31-December-2011], Service de Mécanique Rationnelle, Dynamique et Vibrations (Department of Theoretical Mechanics, Dynamics, and Vibration), Université de Mons (UMONS), Belgium.
- **Researcher** [postdoctoral fellow, 25-October-2007 – 24-October-2008], Earthquake Engineering Research Center, University of California - Berkeley (UCB), United States of America.
- **Researcher** [postdoctoral fellow, 9-October-2006 – 8-October-2007], Instituto de Ingeniería (Engineering Institute), Universidad Nacional Autónoma de México (UNAM), Mexico.
- **Part-time Professor** [February-2004 – January-2007], Departamento de Mecatrónica (Department of Mechatronics), UNAM, Mexico.
- **Teacher Assistant** [level A, May-1998 – August-1999; level B, August-1999 – January-2000], Departamento de Ingeniería Mecánica (Department of Mechanical Engineering), UNAM, Mexico.

2 Education

- **Doctor of Engineering** (control engineering) [September 2002 – September 2006], Universidad Nacional Autónoma de México.
- **Master of Engineering** (control engineering) [August 1999 – June 2002], Universidad Nacional Autónoma de México.
- **Mechanical Engineer** (minor: mechatronics) [September 1993 – October 1999], Universidad Nacional Autónoma de México.

3 Research and Development projects

- **SPEAR (European Research Council ERC Grant)**
  Vakgroep Toegepaste Mechanica, VUB [February 2016 – present]
  URL: http://mech.vub.ac.be/multibody/projects.htm
- **H2R (Seventh Framework Programme FP7)**
  Vakgroep Toegepaste Mechanica, VUB [January 2014 – January 2016]
  URL: http://www.h2rproject.eu/
- **BioMot (Seventh Framework Programme FP7)**
  Vakgroep Toegepaste Mechanica, VUB [January 2015 – September 2015]
  URL: http://www.biomotproject.eu/
- **MIRAD (SBO - IWT Flanders)**
  Vakgroep Toegepaste Mechanica, VUB [January 2015 – September 2015]
  URL: http://www.mirad-sbo.be/
- **CYBERLEGs (Seventh Framework Programme FP7)**
  Vakgroep Toegepaste Mechanica, VUB [May 2012 – May 2014]
  URL: http://www.cyberlegs.eu/
- **ALTACRO (University Research Council of Vrije Universiteit Brussel)**
  Vakgroep Toegepaste Mechanica, VUB [September 2013 – October 2013]
  URL: http://altacro.vub.ac.be/

- **Biomanufacturing (FEDER - Région Wallonne Convergence 2008)**
  Service de Mécanique Rationnelle, Dynamique et Vibrations, UMONS [June 2009 – December 2011]
  http://recherche-technologie.wallonie.be/projets/index.html?IDD=12477
- **Adaptive Observers for Hybrid Simulation (UC-MEXUS - CONACyT)**
  Earthquake Engineering Research Center, UCB [October 2007 – October 2008]
  URL: https://ucmexus.ucr.edu/results/results_2007.html
- **Control and Monitoring of Distributed Systems (UNAM PAPITT IN110403)**
  Instituto de Ingeniería, UNAM [October 2006 – October 2007]
- **Friction compensation in robotic systems (UNAM PAPITT IN109306)**
  Instituto de Ingeniería, UNAM [October 2006 – October 2007]
- **Control of Electromechanical Systems with Friction Phenomena (CONACyT 47583-Y)**
  Instituto de Ingeniería, UNAM [October 2006 – October 2007]
- **Characterization and Control of Electromechanical Systems with Friction (DGAPA IN104700)**
  Facultad de Ingeniería, División de Estudios de Posgrado, UNAM [May 2002 – July 2002]
- **Semi-active Control of Structures (CONACyT 31226-U)**
  Instituto de Ingeniería, UNAM [September 2001 – April 2005]
- **Expert System for Mechanical Failure Analysis (UNAM)**
  Facultad de Ingeniería, UNAM [November 1999 – January 2000]
- **Software for a Flexible Manufacturing Cell (UNAM - DGAPA IN505495)**
  Facultad de Ingeniería, UNAM [December 1998 – October 1999]

4 Publications

4.1 Articles in journals

[1] Geeroms, J., Flynn, L., Jimenez-Fabian, R., Vanderborght, B., and Lefeber, D. Design and energetic evaluation of a prosthetic knee joint actuator with a lockable parallel spring. *Bioinspiration & Biomimetics*, 12(2):026002, 2017.

[2] Torricelli, D., Gonzalez, J., Weckx, M., Jiménez-Fabián, R., Vanderborght, B., Sartori, M., Dosen, S., Farina, D., Lefeber, D., and Pons, J.L. Human-like compliant locomotion: state of the art of robotic implementations. *Bioinspiration & Biomimetics*, 11(5):051002, 2016.

[3] Flynn, L., Geeroms, J., Jimenez-Fabian, R., Vanderborght, B., Vitiello,N., and Lefeber, D. Ankle-knee prosthesis with active ankle and energy transfer: Development of the CYBERLEGs alpha-prosthesis. *Robotics and Autonomous Systems*, 73:4–15, 2015.

[4] Jimenez-Fabian, R., Flynn, L., Geeroms, J., Vitiello,N., Vanderborght, B., and Lefeber, D. Sliding-bar MACCEPA for a powered ankle prosthesis. *Journal of Mechanisms and Robotics*, 7(4):041011–1 – 041011–11, 2015.

[5] Duvinage, M., Castermans, T., Jiménez-Fabián, R., Hoellinger, T., Petieau, M., Verlinden, O., Cheron, G., and Dutoit, T. Human walk modeled by PCPG to control a lower limb neuroprosthesis by high-level commands. *Journal of Systemics, Cybernetics and Informatics*, 10(3):70–80, 2012.

[6] Jiménez-Fabián, R. and Verlinden, O. Review of control algorithms for robotic ankle systems in lower-limb orthoses, prostheses, and exoskeletons. *Medical Engineering & Physics*, 34(4):397–408, 2012.

[7] Jiménez-Fabián, R. and Alvarez-Icaza, L. An adaptive observer for a shear building with an energy-dissipation device. *Control Engineering Practice*, 18(4):331–338, 2010.

[8] Jiménez-Fabián, R. and Alvarez-Icaza, L. Simultaeous state estimation and parameter tuning in a shear building with a magneto-rheological damper. *Structural Control and Health Monitoring*, 16(4):483 – 502, 2009.

[9] Jiménez, R. and Alvarez, L. Estimación adaptable de estados en un edificio equipado con un amortiguador magneto-reológico. *Revista Iberoamericana de Automática e Informática Industrial*, 5(1):135–143, 2008.

[10] Jiménez, R. and Alvarez, L. A real-time estimation scheme for buildings with intelligent dissipation devices. *Mechanical Systems and Signal Processing*, 1(21):2427–2440, 2007.

[11] Jiménez, R. and Alvarez, L. LuGre friction model for a magnetorheological damper. *Structural Control and Health Monitoring*, 12(1):91–116, 2005.

[12] Jiménez, R. and Alvarez, L. Identificación en tiempo real de amortiguadores magneto-reológicos. *Ingeniería. Investigación y Tecnología*, IV(2):109–118, 2003.

4.2 Articles in conference proceedings

[1] Mathijssen, G., Furnemont, R., Verstraten, T., Brackx, B., Premec, J., Jimenez-Fabian, R., Lefeber, D., and Vanderborght, B. +SPEA introduction: drastic actuator energy requirement reduction by symbiosis of parallel motors, springs and locking mechanisms. In *2016 IEEE International Conference on Robotics and Automation, Stockholm, Sweden*, pages 676–681, 2016.

[2] Flynn, L., Geeroms, J., Jimenez-Fabian, R., Vanderborght, B., and Lefeber, D. CYBERLEGS beta-prosthesis active knee system. In *Rehabilitation Robotics (ICORR), 2015 IEEE International Conference on*, pages 410–415, 2015.

[3] Weckx, M., Van Ham, R., Cuypers, H., Jimenez-Fabian, R., Torricelli, D., Pons, J.L., Vanderborght, B., and Lefeber, D. Prototype design of a novel modular two-degree-of-freedom variable stiffness actuator. In *2014 14th IEEE-RAS International Conference on Humanoid Robots (Humanoids), Madrid, Spain*, pages 33–38, 2014.

[4] Geeroms, J., Flynn, L., Jimenez-Fabian, R., Vanderborght, B., Vitiello, N, and Lefeber, D. Design, development and testing of a lightweight and compact locking mechanism for a passive knee prosthesis. In *2014 5th IEEE RAS EMBS International Conference on Biomedical Robotics and Biomechatronics*, pages 1016–1021, 2014.

[5] Geeroms, J., Flynn, L., Jimenez-Fabian, R., Vanderborght, B., and Lefeber, D. Ankle-knee prosthesis with powered ankle and energy transfer for CYBERLEGs α-prototype. In *2013 IEEE International Conference on Rehabilitation Robotics, Seattle, Washington USA*, pages 1–6, 2013.

[6] Flynn, L., Geeroms, J., Jimenez-Fabian, R., Vanderborght, B., and Lefeber, D. Ankle-knee prosthesis with powered ankle and energy transfer - development of the CYBERLEGs α-prototype. In *International Congress on Neurotechnology, Electronics and Informatics, Vilamoura, Portugal*, pages 224–228, 2013.

[7] Duvinage, M., Castermans, T., Jimenez-Fabian, R., Hoellinger, T., De Saedeleer, C., Petieau, M., Seetharaman, K., Cheron, G., Verlinden, O., and Dutoit, T. A five-state P300-based foot lifter orthosis: Proof of concept. In *3rd IEEE Biosignals and Biorobotics conference (ISSNIP), Manaus, Brazil*, pages 1–6, 2012.

[8] M. Duvinage, R. Jimenez-Fabian, T. Castermans, O. Verlinden, and T. Dutoit. An active foot lifter orthosis based on a PCPG algorithm. In *IEEE International Conference on Rehabilitation Robotics, Zurich, Switzerland*, pages 1–7, 2011.

[9] Alvarez, L. and Jiménez, R. Modelo dinámico de fricción de segundo orden con parametrización lineal. In *Memorias del Congreso Anual de la Asociación de México de Cotrol Automático, Nuevo León, México*, 2007.

[10] Alvarez-Icaza, L. and Jiménez-Fabián, R. An identifiable control-oriented dynamic friction model. In *Proceedings of the 2007 Conference in Nonlinear Control Systems, Pretoria, South Africa*, 2007.

[11] Jiménez-Fabián, R. and Alvarez-Icaza, L. Adaptive state estimation in a building with an adjustable damper. In *Proceedings of the 2007 Conference in Nonlinear Control Systems, Pretoria, South Africa*, 2007.

[12] Jiménez, R. and Alvarez-Icaza, L. Semiactive control of a shear building using an adaptive observer. In *Proceedings of the American Control Conference, New York, NY., USA.*, pages 2236–2241, 2007.

[13] Jiménez, R. and Alvarez-Icaza, L. A state observer for a building with a magneto-rheological damper and parameter uncertainty. In *Proceedings of the American Control Conference, Minneapolis, MN., USA.*, pages 2880–2885, 2006.

[14] Jiménez, R. and Alvarez, L. Estimación adaptable de estados en un edificio equipado con un amortiguador magneto-reológico. In *Memorias del Congreso Anual de la Asociación de México de Cotrol Automático, Ciudad de México*, pages 211–216, 2006.

[15] Jiménez, R. and Alvarez, L. Observador adaptable para edificios basado en mediciones de fuerza y aceleración. In *Memorias del Congreso Anual de la Asociación de México de Cotrol Automático, Ciudad de México*, pages 318–323, 2004.

[16] Jiménez, R. and Alvarez-Icaza, L. Civil structures semi-active control with limited measurements. In *Proceedings of the American Control Conference, Boston, MA, USA*, pages 5467–5471, 2004.

[17] Alvarez, L. and Jiménez, R. Semi-active control of civil structures using magnetorheological dampers. In *Proceedings of the American Control Conference, Denver Colorado*, pages 1428–1433, 2003.

[18] Alvarez, L. and Jiménez, R. Observador adaptable para el control semiactivo de estructuras civiles. In *Memorias del Congreso Nacional de la Asociación de México de Cotrol Automático, Ensenada, Baja California, México*, pages 360–365, 2003.

[19] Jiménez, R. and Alvarez, L. Real-time identification of structures with magnetorheological dampers. In *Proceedings of the 41st IEEE Conference on Decision and Control, Las Vegas, Nevada, USA*, pages 1017–1022, 2002.

[20] Alvarez, L. and Jiménez, R. Identificación en tiempo real de estructuras con amortiguadores magneto-reológicos. In *Memorias del Congreso Latinoamericano de Control Automático CLCA2002, Guadalajara, Jalisco, México*, 2002.

[21] Alvarez, L. and Jiménez, R. Control semiactivo de estructuras con amortiguadores magneto-reológicos. In *Memorias del Congreso Latinoamericano de Control Automático CLCA2002, Guadalajara, Jalisco, México*, 2002.

[22] Alvarez, L. and Jiménez, R. Real-time identification of magneto-rheological dampers. In *Proceedings of the 15th Triennial IFAC World Congress, Barcelona España*, pages 2252–2257, 2002.

[23] Olmos, L., Jiménez, R., Lara, O., and Ortiz, P. Implementación de un sistema de manufactura flexible de carácter didáctico. In *Memorias del V Congreso Anual de la SOMIM, Oaxaca, México*, 1999.

[24] Jiménez, R., Olmos, L., Lara, O., and Ortiz, P. Arquitectura y software para el control de un sistema de manufactura flexible. In *Memorias del IV Congreso Anual de la SOMIM, Ciudad Juárez, México*, pages 201–207, 1998.

Brussels, February 2017