

## Pierre JAUNIAUX

*please contact me by email*

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Date of birth: 20<sup>th</sup> August 1983

Nationality: Belgian / French

Driving licence B

## Mechanical Engineer / Aeronautical Engineer

### Professional background

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- 2007 – now** Design Architect in the Mechanical Design Department at **Alstom Belgium Transport**:
- Design of auxiliary converters and traction systems
  - Finite Element Analysis Expert – Mechanical validation of equipment according to shock & vibrations standards (IEC 61373, EN 12663, GOST ...)
  - Finite Element Analysis Skill Leader for all Transport Component Electrical sites (Sesto – Italy; Tarbes – France; Charleroi – Belgium) since 2010 – Continuous improvement of Alstom's finite element methodology

### Educational background

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**2005 - 2007** **Dual Diplomas** with the T.I.M.E. (Top Industrial Manager for Europe) convention between the *Ecole Nationale Supérieure de l'Aéronautique et de l'Espace* (Supaero, Toulouse, France) and the *Université Libre de Bruxelles* (U.L.B. Brussels, Belgium)

**2006-2007**: 3<sup>rd</sup> year of Engineering at SUPAERO

Major: *Systems Energetic – Propulsion, Aerodynamics*

**2001 – 2005** **Faculté Polytechnique de l'Université Libre de Bruxelles**

General training in electricity, electronics, programming, automation and a specialization in mechanics (structures, finite elements, aerodynamics, dynamics of articulated systems, atmospheric engines, turbomachines)

**2003-2005**: First two years of the **Civil Engineering degree**:

Major: *Mechanical Engineering*

**2006 – 2007** **Long Project**: Study of the GE-90 Aircraft Engine

**2005 – 2006** - **Dissertation Topic** : « *Amélioration de la restitution des efforts aérodynamiques sur maquette en mouvement sur une suspension par câbles* » (« *Improvement of the restitution of aerodynamics forces on a moving model suspended with cables* ») – Realized in the *Office National d'Etudes et Recherches Aérospatiales* (O.N.E.R.A.)

- French semi-finals of the *Euromanager* contest. Team sponsored by Safran.

**2004.2005** - **Long Project**: Creation of a finite element software (Matlab)

- Participation in the *Euromanager* contest. Team sponsored by Altran.

### Languages

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**French** Mother Tongue

**English** Fluent – 2 years stay in Houston, USA – TOEFL: 623 / Bulats Test : Advanced (C1)

**Dutch** Basic knowledge

**Spanish** Basic knowledge

### Computer Skills

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**Programming** Java, C/C++, Python, PHP, MySQL, HTML, Django Framework

**Engineering** ANSYS (Expert), Hypermesh (Expert), Hyperview (Expert), Optistruct, CATIA V5, Matlab, Simulink. Notions de Fluent, ICEM, Samcef, PSpice

### Other activities

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**Music** Clarinet (9 years), piano (8 years), musical theory (5 years)

**Sport** Jogging (Semi-Marathon), mountain trekking, canyoning, snowboarding, windsurfing

**Other** Nature, photography, R/C models

## Professional Experience

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- 2011
- **MPM10 project:** Mechanical design/ architecture of the Montreal's subway traction system
  - **Chennai project:** Mechanical validation / structural design of Chennai's subway auxiliary converter. Thickness and discrete material optimisation on the mechanical design.
  - **Kazakhstan auxiliary converter** and **Russian auxiliary converter** for TMH Locomotives: Development and validation of an ANSYS methodology according to GOST shock & vibration standards; Mechanical validation of the auxiliary converters and low voltage cabinets.
  - **Regiolis project:** Mechanical design, optimisation and validation of tubular frame electrical cabinet for SNCF next-generation of regional trains.
  - **Regiolis project:** Thermal simulation of the diesel engine control electronic box
- 2010
- **Optonix product:** mechanical validation of the range of product (traction system and auxiliary converters) designed for low cost countries.
  - **EP20 auxiliary converter** for TMH Locomotives : numerical simulation of the two main transformers mounted on damping systems in the cubicle
  - **MI09 project:**
    - Mechanical design / architecture / validation of the auxiliary converter for the next-generation of RATP's RER A line in Paris.
    - Design of a naturally opened gas-spring system for bended external covers
    - Mechanical validation (rivets behaviour / pressure waves / shock & vibrations) of the external bended covers
- 2009
- **RGV2N2 project:** Mechanical validation of the TGV Duplex auxiliary converter for SNCF
- 2007 – 2008
- Mechanical validation of auxiliary converters for **Metropolis platform**, Alstom product range for subways. Supervision of shock and vibration tests in Sopemea Laboratory (Paris – France). Investigations on problems occurring with resonant frequencies of poorly designed internal dampers leading to ruins of the mechanical structure.