**Dr. Eng. Xavier Gnata**

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###### **Systems engineer**

**Work experience**

**September 2017 – Now: Systems/Performance Engineer Airbus Defence and Space (Toulouse)**

* Lead engineer for studies, Performances and Verification of optical instruments in the frame of CNES and ESA projets.

 **January 2008 – August 2017: Systems Engineer Airbus Defence and Space (Munich)**

* Lead of the exchange of the calibration engineering know-how across projects.
* METimage instrument calibration responsible. Multispectral imaging radiometer for meteorological applications.
* Sentinel-4 UVN instrument calibration responsible. Continuous monitoring of the atmospheric chemistry at high resolution from the geostationary orbit.
* JWST/NIRSpec System level tests, verification plan and performances responsibility. NIRSpec (Near Infrared Spectrograph) is the 0.6 to 5µm spectrograph of the James Webb Space Telescope (JWST).

**January 2005 - December 2007: PhD student and EADS ASTRIUM SAS optics engineer (Lyon and Toulouse France)**

* Numerical model and optical performances analysis of JWST/NIRSpec.
* Zemax, C++, Python, Numerically Intensive Computing.

**2005 (6 months): Consulting for EADS ASTRIUM GmbH (Munich)**

* Optical performances computations using Zemax, C, C++.

**2004 (6 months):** **“Centre de Recherche Astronomique de Lyon” (CRAL) in consortium with EADS Astrium GmbH**

* Wavelets based compression algorithms applied to NIRSpec simulated images.

**2003 (6 months):** **CRAL in consortium with EADS Astrium GmbH**

* End to end simulation and performances analysis of the Near Infrared Spectrograph JWST/NIRSpec. C language. Zemax.

**2002 (5 months):** **“Laser et Applications” Laboratory, CEA Saclay (France)**

* Design and build of an UV laser by frequency tripling a high repetition rate Nd:YAG laser. Nonlinear and solid state laser optics.

**Academic background**

**October 2018 : Training “Developing Your Leadership”**

**November 2015 : Training “Dynamics of a High Performing Team”**

* Understand the key concepts of team dynamics. Establish the diverse roles and responsibilities of a manager.

**September 2011 - July 2012: Space Systems Engineering Qualification**

* **38 days international training**
* Space market and Customers, Systems Engineering methodology, coordination & Direction of Engineering Teams, INCOSE Systems Engineering Handbook.

**January 2005 - December 2007:** **EADS ASTRIUM SAS / University of Lyon**

* **PhD in Optics** “JWST/NIRSpec Instrument Performance Simulator”.
* PhD defence on the 7th of December 2007. Highest honors.

**October 2003 - October 2004: École Nationale Supérieure des Mines de Saint Étienne**

* **M.Sc., Signal and Image processing**, Optics, Highest honors.

**2000 - February 2003: École Centrale de Marseille**

* **Master of Engineering:** Courses on mathematics and physics, especially on Optics and Signal/Image Processing.

**1998 - 2000:**  Preparatory classes MP: Nationwide competitive preparation program in advanced mathematics and physics for admission to French leading Engineering Schools. Lycée du Parc in Lyon.

**June 1998**: Baccalauréat S (mathematics, physics and biology). Highest honors.

**Foreign languages and other skills**

**English**: Fluent.

**German:** Speaking Level B2. Listening Level C1.

**Computer science:**

* DOORS and Microsoft Project.
* Zemax, MATLAB, Mathematica, GNU/Linux, Python, C, C++.

**Publications:**

* ADASS XIII ASP Conference Series, Vol. 314, 2004 “End to end Simulation of the JWST/NIRSpec instrument” X. Gnata, P. Ferruit, A. Pécontal-Rousset.
* ADASS XVII ASP Conference Series, 2007 “Algorithms to model the multi-object spectrograph JWST/NIRSpec Instrument” X. Gnata, P. Ferruit
* 18 other publications as co-author (SPIE / AAS / A&A / ADASS)

**Hobbies and interests**

Music (Clarinet), Hiking, Photography.