

Dr. Eng. Xavier Gnata

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Citizenship: French

08.14.1980

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 projects.

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 5 μ m 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.