GUY GOYETTE

Antenna and Applied Electromagnetism Scientist & Physics Adjunct Professor
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TECHNICAL SKILLS AND KNOWLEDGE

Experienced Electromagnetism Systems Design Fellow with a demonstrated history of working in the Satellite and Space Systems Industry along with Teaching and Mentoring at University and Industry levels. Skilled in Applied Physics, Engineering, Teaching and Mentoring, currently enjoys teaching at California Lutheran University at Undergraduate level. Strong research professional with a master's degree focused in Electromagnetism, Applied Physics and Communications Engineering from Université de Montréal - Ecole Polytechnique

EXPERIENCE

Adjunct Physics Professor

California Lutheran University in Thousand Oaks, California.
2017 – Present

- Preparation and Teaching of the courses:
  - Mechanics and Thermodynamics (Algebra based) (PHYS-201 General Physics I).
  - Electricity, Magnetism and Optics (Algebra based) (PHYS-202 General Physics II).
  - Musical Acoustic (PHYS-120). The course is adapted to be offered to Music, Music Production, and other Arts oriented programs at CLU.

- Prepared and teaches the Musical Acoustic class in an active learning environment where lectures, labs and virtual applications are all gathered in one setting.
- All courses mentioned have been taught in-person and in an online environment

Senior Scientist Level 6; Boeing Associate Technical Fellow

Boeing, Space and Integrated Systems division
1997 - 2017

- Lead Antenna designer in the New Business group, looks for solutions that provide on-orbit flexibility and cost performance to the worldwide Satellite customer base.
- Use his extensive knowledge of the Satellite customer base needs to lead the technical development of Payload Antennas architecture for new Satellite lines of product such as the Boeing's 702SP all-electric propulsion "Smallsat".
- Act as a focal point between the Antenna Group and the Spacecraft Design Center; often involved in the top-level system trades, bringing solutions that address end-to-end payload system.
- Takes leadership roles in important Government study/proposal efforts such as WGS, GPS-III along with Commercial programs such as SES-9, ABS-3W and 2A, Intelsat 4-pack, SES-15 and many others.

- Design Satellite Antenna and Electromagnetism systems at L, S, C, X, Ku and Ka Bands for commercial and government applications (shaped Reflectors, Gregorian, Multi-Beams Antenna, High Gain Antenna, Arrays).
- Subject-matter expert for on-going projects to perform complex antenna analysis; act as a resource person for many Engineers in the Antenna department.
- Author of many technical papers at Boeing on Antenna Design Procedures
- Has been mentoring many junior engineers at Boeing along with High School Seniors during the summer.

Specialist Engineer

SPAR Aerospace Limited, Canada
1986 - 1996

- Lead electrical engineer on projects in the field of Antenna and Microwave Networks for Communication and Remote Sensing Satellites.
- Responsible for the RF design and testing of the NASA TERRA high gain antenna.
- Responsible for the design and test of the Flight Wave-guide feed Network of the 15m×1.5m Radarsat-I SAR antenna. Have collaborated in many R&D projects (active arrays, new reflector technologies, patch antennas…)
- Designed microwave circuits in various technologies including waveguide, coaxial and microstrip.
- Designed dual-grid shaped reflector antennas using POS and GRASP (from TICRA)
- Successfully led the development of Dichroic surface (FSS) to be used on NASA's EOS (Terra) high gain shaped Cassegrain antenna (S/Ku).
- Collaborated with international customers, including NASA, ESA (European Space Agency), Alcatel Espace on many Space antenna development projects

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ACADEMIC

Master in Applied Sciences 1982 - 1985
Department of Electrical Engineering
École Polytechnique of Montreal

Bachelor in Engineering Physics 1977 - 1982
Department of Engineering Physics
École Polytechnique of Montreal

College Degree 1975 - 1977
Pure and Applied Sciences
Granby College

Teaching Credentials, Single subject Physics: 2017 - Present
California State University, Northridge,

AWARDS and RECOGNITIONS

- Boeing's Special Invention Award (2012)
- Boeing World Class Engineering Award (2010)
- Selected to Boeing's Technical Fellowship (Associate) in 2006
- Boeing's Special Invention Award (2002)
- Author of 4 U.S. patents

- Boeing's Technical Achievement Awards (six) and Invention Disclosure Awards (four)
- Granted US permanent residency under "Outstanding Researcher" category
- SPAR's Employee of the month award for innovative design

Graduate studies were supported financially under the form of student grants

- At Master level by the Government of Quebec (F.C.A.C.)

AFFILIATIONS

- Member of the American Association of Physics Teachers

- Senior Member, Institute of Electronic and Electrical Engineering (IEEE)

- Member, Association of Graduate Students of Ecole Polytechnique (University of Montreal)

- Fellow of EnCorps

PATENTS

1- Phase-only reconfigurable multi-feed reflector antenna for shaped beams
Patent number: 6456252
Type: Grant
Filed: October 23, 2000
Issued: September 24, 2002
Assignee: The Boeing Company
Inventor: Guy Goyette

2- Multi-step circular horn system
Patent number: 6384795
Type: Grant
Filed: September 21, 2000
Issued: May 7, 2002
Assignee: Hughes Electronics Corp.
Inventors: Arun K. Bhattacharyya, Guy Goyette

3-Beam reconfiguration method and apparatus for satellite antennas
Patent number: 6943745
Type: Grant
Filed: March 31, 2003
Issued: September 13, 2005
Assignee: The Boeing Company
Inventors: Sudhakar K. Rao, Guy Goyette, Cameron Massey, George Voulelikas, Joel A. Fink

4-Feed re-pointing technique for multiple shaped beams reflector antennas
Patent number: US20160172756A1
Type: Grant
Filed: 12/15/2014
Publication Date: 11/6/2018
Assignee: The Boeing Company
Inventors: Goyette Guy, Ramanujam Parthasarathy, Mathews Daniel F.

PUBLICATIONS

1- Handbook of Reflector Antennas and Feed Systems Volume 2: Feed Systems, Lotfollah Shafai, Satish K. Sharma, and Sudhakar Rao, Editors; Chapter 4, Arun K Bhattacharyya and Guy Goyette, *Smooth Wall Multimode Horns for High Efficiency-Theory, Design and Applications. 2013 Artech House.*

2- Arun K. Bhattacharyya and Guy Goyette, *A Novel Horn Radiator With High Aperture Efficiency and Low Cross-Polarization and Applications in Arrays and Multibeam Reflector Antennas*, IEEE Transactions on Antennas and Propagation, Vol. 52, NO 11, November 2004.

3- A. Bhattacharyya and G. Goyette, *Step-horn antenna with high aperture efficiency and low cross-polarization in Electronics Letters,* 21st November 2002, Vol 38, No. 24

4- G. Goyette, M. Kuczewski and G. S. Bush, *Design of the waveguide feed components of the 15m X 1.5m Radarsat SAR Antenna.* in Proceedings of Journées Internationales de Nice sur les Antennes (JINA), Nice, November 8-10,1994

5- K.S. Rao, G. Goyette, H. Gauvin and S. Richard, *Reconfigurable L-Band active array antenna for satellite communications.* Can. J. Elect. & Comp. Eng., Vol. 17, No. 3,1992

6- R.J. Fralich, G. Goyette and K.S. Rao, *Space-Qualified L-Band circular polarized subarray for satellite communications,* ANTEM'92 Symposium on antenna Technology and Applied Electromagnetics, August 5-7,1992.

7- K.S. Rao, H. Gauvin, G. Goyette and S. Richard, *A Reconfigurable L-Band Active Array for Satellite communications.* ANTEM'90 Symposium on Antenna Technology and Applied Electromagnetics, August 15-17, 1990

8- K.S. Rao, F. Hyjazie, S. Richard and G. Goyette, *Development of an L-Band Active Array Receive Antenna for Satellite communications.* ESA Workshop on antenna Technologies, ESTEC, Noordwijk, The Netherlands, Nov. 1989

9- G. Goyette and M. Nachman, *Thickness of the ion-sheath Surrounding a Langmuir Probe,* in Program and Abstr. 39th Annual Gaseous Electronics Conf.(Madison, WI)1986, p. 102

10- G. Goyette, *Effet des ondes de gaine sur la caracteristique en frequence d'une sonde Langmuir*, These de Maitrise, Bibliotheque de l'Ecole Polytechnique de Montreal*,*1985

11- G. Goyette and M. Nachman, *Effect of sheath waves on the frequency characteristics of Resonant probes,* in IEEE Conf. Rec. 1984. IEEE International Conf. on Plasma Science (St. Louis, MO) p.73