

# Roland Badeau, Ph.D.

French Nationality

Born August 28, 1976 in Marseille, France

**Associate Professor** since December 2005

**Habilitation** since November 2010

**French qualification for the tenure of Full Professor**

**Chief Engineer of the Corps of Mines** (foremost of the great technical corps of the French state)

Institut Mines-Télécom, Télécom ParisTech, CNRS LTCI

Signal and Image Processing Department (TSI)

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## Education and diplomas

**2009-2010 : Habilitation (highest academic degree in France) from the *Université Pierre et Marie Curie* (UPMC), Paris (habilitation defended on November 30, 2010). Topic : "High resolution spectral analysis and non-negative decompositions with application to music signal processing".**

**2001-2005 : Ph.D. degree from the *École Nationale Supérieure des Télécommunications* (ENST), Paris, in Signal and Image processing (Ph.D. defense on April 18, 2005). Topic: "High resolution methods for estimating and tracking modulated sinusoids. Application to music signals.". With highest honors. **ParisTech 2006 Ph.D. Award.****

**2000-2001 : Master of Science degree from the *École Normale Supérieure de Cachan* in Mathematics, Vision, and Machine learning. With highest honors.**

**1999-2001 : State Engineering degree from the ENST, Paris.**

Core program and two major courses: "Signal and Image processing" and "Audiovisual and Multimedia".

**1996-1999 : State Engineering degree from the *École Polytechnique*, Palaiseau.**

Core program and two major courses: "Applied Mathematics" and "Information Technology".

## Professional experience

**Since Dec. 2005: Associate Professor** in the Department of Signal and Image Processing of Telecom ParisTech, Paris. Audio, Acoustics and Waves group.

**Sep. 2001 - Nov. 2005: Assistant Professor** in the Department of Signal and Image Processing of ENST.

**March 2000 - August 2000:** 6-month research and development internship in the field of ultrasound image processing, in Philips Research France laboratories, Limeil-Brévannes, in collaboration with an American company. Topic: "Segmentation and tracking of the cardiac wall in 2D ultrasound imagery".

**April 1999 - June 1999:** 3-month research internship in the field of Synthetic Aperture Radar (SAR) image processing, in the Department of Signal and Image Processing of ENST. "Best specialization internships" Award from the École Polytechnique. Topic: "Mellin transform: digital aspects and fractional calculus".

## Research interests

- **Audio signal processing and musical applications** (sinusoidal models, non-stationary signal modeling, analysis/synthesis, sound effects, audio coding, multi-pitch estimation, beat tracking, automatic transcription, source separation)
- **High resolution spectral analysis** (model order selection, fast adaptive algorithms, subspace tracking, performance analysis)
- **Non-negative Bayesian decompositions** (non-negative matrix factorization, Bayesian estimation of Gaussian mixtures, temporal and spectral constraints, convergence analysis)

## Scientific production

- **Habilitation and Ph.D. Theses**
- **19 peer reviewed journal papers**
- **50 peer reviewed international conference proceedings papers**
- **5 peer reviewed national conference proceedings papers**
- **12 technical reports**
- **2 patents**, 1 software, 1 data basis
- **5 contributions** to international conferences without proceedings
- **5 lecture notes**
- H-index: 16, G-index: 26 (source: <http://www.harzing.com/>, August 7th, 2012)

## Supervision of research works

**Since 2006** : Supervision of **5 internships** in Télécom ParisTech (duration greater than or equal to 4 months)

**Since 2005** : Supervision of **6 Ph.D.'s** in Télécom ParisTech (duration greater than or equal to 3 years)

**Since 2002** : Supervision of **9 engineering students' projects** in Télécom ParisTech (duration greater than 3 months)

## Involvement in research projects

**November 2006 - February 2010** : **Management of the ANR DESAM research project**

**Since 2006** : Involvement in 2 international research projects

**Since 2004** : Involvement in 5 French research projects

## Evaluation of research

**Since 2012** : **Associate Editor** of the EURASIP Journal on Audio, Speech, and Music Processing

**Since 2007** : **5 conference program committees**

**Since 2006** : **6 Ph.D. examining committees**

**Since 2002** : Reviewing of more than 40 international journal papers and 40 conference papers

## Teaching activities

**Since 2006** : **Continuing education in Télécom ParisTech**

**Since 2004** : UPMC Master of Sciences and Technologies, **ATIAM** learning track

**Since 2001** : **Télécom ParisTech Master of engineering** (First year and Graduate School)

## Miscellaneous

**Since 2010** : **Member of the senate of Télécom ParisTech**

**Since 2010** : **Senior Member** of the IEEE

**Since 2004** : **Management of 7 teaching units**

## Languages (Common European Framework of Reference for Languages)

	Understanding				Speaking				Writing	
	Listening		Reading		Spoken interaction		Spoken production			
English	B2	Vantage	C2	Proficiency	B2	Vantage	C1	Advanced	C1	Advanced
Spanish	B2	Vantage	C1	Advanced	B2	Vantage	B2	Vantage	B2	Vantage