

Grégoire MERCIER

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Professor at Telecom Bretagne
Doctor in signal processing, entitled to direct research
Engineer in telecommunications

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Grégoire MERCIER, IEEE SM'07, was born in France in 1971. He received the Engineer Degree from the *Institut National des Télécommunications*, Evry, France in 1993, his Ph.D. degree from the University of Rennes I, Rennes, France in 1999 and his *Habilitation à Diriger des Recherches* from the University of Rennes I in 2007. Since 1999, he has been with Télécom Bretagne, where he has been an Associate Professor in the Image and Information Processing department (ITI). He is Professor since 2010. His research interests are in remote sensing image compression and segmentation, especially in hyperspectral and Synthetic Aperture Radar. Actually, his research is dedicated to change detection from image time series and combating pollution. He was a visiting researcher at DITEN (University of Genoa, Italy) from March to May 2006 where he developed change detection technique for heterogeneous data. He was also a visiting researcher at CNES (France) from April to June 2007 to take part of the Orfeo Toolbox development. Since 2012, he is external collaborator of the AYIN research group at INRIA-SAM. Prof Mercier is an Associate Editor for the IEEE Geoscience and Remote Sensing Letters. He has been President of the French Chapter of IEEE Geoscience and Remote Sensing Society from 2010 to 2013.

Teaching Activities

Regular Lectures

- Signal processing;
- Image processing;
- Image/video compression;
- Programming in C.

Scientific training

- Signal Processing;
- Image Processing with matlab/scilab;
- Image Compression and watermarking;
- Image Processing Programming in C/C++.

Administrative responsibilities

- Head of the *Information Processing Systems* option

Research Activities

Publications

- International Journals: 33 (+2 under review)
- Conferences: 82
- Participation in Books: 5
- Directed PhDs: 6 (under progress), Supervised PhDs: 10 (defended)

Topics His main concern is dedicated to characterize the link between observations and informations

- Image Processing (Diffusion/non linear filtering, Texture analysis...)
- Signal Processing (Wavelets, Kernel machines, Neural net, Independent Component Analysis, Edge-worth expansion, Copula Theory, Order statistics...)
- Remote sensing (SAR, PolSAR, optic multispectral and hyperspectral) from low to very high resolution.

Main projects

- TOSCA/CNES: SYNIHAL (*SYnergie de l'Imagerie optique/radar a tres haute resolution spatiale pour la cartographie des HABitats Lagunaires*) directed by GeoTransfert. Januray 2012 - December 2013.
- DGA / DEPO *Faking detection*, in collaboration with CS, 2010-2012.
- CNES R&T / *Temporal unmixing for time series analysis of multi/hyper-spectral images* in collaboration with CS, 2010-2012.
- CARNOT / *superTemp Change detection in long time series with high spatial / temporal resolution*. 2007-2009.
- CNES R&T / *Similarity measure between SAR: application to change detection*, 2003, 2005-2006, 2006-2007 and 2007-2009.
- PNTS / *Land use change detection in farming area through multisource data fusion*. In collaboration with COSTEL, 2004-2006.
- DéCA: *Abrupt Change Detection* (head of project). In collaboration with Telecom Paris, Telecom Sud-Paris, Institut Fresnel and CNES, 2005.

- RITMER / DETECSUIV, *Detection and monitoring of oil slick from remotely sensed data* (including SAR, hyperspectral and FLS data). Scientific head of project, in collaboration with SAS Actimar, 2003-2005.
- CIS: *SAR Image Compression* for military purpose (DGA). Co-headed with SAS IPSIS, 2004.
- PNTS / *Land use and cover change detection in intensive farming area*, collaboration with COSTEL who head the project, 2000-2002.
- MOSS: *Multiresolution Oil Slicks Segmentation*. In collaboration with CNES, Telecom Sud-Paris and Institut Fresnel, 2003.
- MARS AIS (*MARine Sar Analysis and Interprétation System for application to the coastal zones*). European project dedicated to promote the knowledge in SAR image processing of the ocean. 2001-2003.
- PNTS / *Land use evolution in intensive agricultural region*. LUCC labelled project, in collaboration with COSTEL, 2001–2002.
- IFRTP (French Polar Institute) / *Sea-ice SAR Image segmentation for ship routing*, 2001.
- PNTS / *SAR Image Processing*. Head of the topic *Compression*, 1998-2000.