

Rejanne Le Bivic, PhD

GIS and Remote Sensing Specialist

Profile

Early-career scientist with a multi-disciplinary profile in Remote Sensing and field data acquisition and processing. I have a strong background in processing multi-sources data such as DGPS data, archive aerial images, satellite optical images and LiDAR pointclouds I learned during my PhD. As for now, I apply those skills as a Post-doctoral Researcher to quantify sediments transport and storage in rivers with various morphologies : mid-Atlantic streams and tropical rivers. During my PhD I was teaching GIS and Remote Sensing for two years to graduate students, as well as Cartography and Geomorphology classes.

Skills

- Computer skills
 - Programming : Matlab, R, Python
 - GIS : ArcGIS, ArcGIS Online, qGIS
 - Pointcloud processing : CloudCompare, 3DReshaper, Fledermaus
 - Photogrammetry softwares : MicMac, AgiSoft PhotoScan, ERDAS Imagine
 - LiDAR processing : Riegl(r) RiscanPro
- Fieldwork
 - DGPS acquisitions and processing (Trimble)
 - Field data acquisition : Esri Collector, StoryMaps
 - Terrestrial LiDAR data acquisition and processing
 - Aerial images acquisition from a plane
 - General organization of fieldwork in challenging areas (tropical forests, riverbeds, coastal areas)
- Teaching
 - Two semesters (8 credits) teaching GIS (ArcGIS and qGIS softwares)
 - Two semesters (6 credits) teaching Image Processing (ENVI IDL)
 - Two semesters (6 credits) teaching Fluvial Geomorphology and Cartography

Education

- 2013-2017 **Ph.D in Geosciences**, '*Quantification of erosion and transport processes in La Reunion island, Indian Ocean, using multi-source remote-sensing data*', University of Western Brittany, Brest, France, Mass-movements study (debris avalanches and slow-moving landslides) and geomorphologic cartography in a tropical environment.
 - Terrestrial LiDAR
 - Aerial photogrammetry
 - Use of archive optical images
 - SPOT-5 optical images correlation
- 2012-2013 **Master of Geosciences**, *University of Werstern Brittany*, Brest, France.
- 2008-2013 **Master of Engineering degree in Geosciences, specialization in Environmental sciences**, *LaSalle Beauvais institute*, Beauvais, France.

Experiences

- 2019-current **Lecturer**, *University of Maryland - Dpt of Geographical Sciences*, MS GIS Program, College Park, MD.
- 2017-2019 **Post-doctoral contract**, *University of Delaware - Dept. of Geological Sciences*, Newark, DE, USA. with Pr. James Pizzuto

description Quantitative study of erosion and sediment storage processes in mid-Atlantic rivers (South River, VA and White Clay Creek, a Delaware river tributary)

- Sediment budgets and empirical models of sediment storage in the watershed
- Watershed-scale geomorphology cartography using raw LiDAR pointclouds, DEM and aerial photography
- Watershed-scale floodplain cartography
- Field studies of fine-grained sediment storage within the riverbed
- Large woody debris mapping

2011 **4-months Internship**, *Syndicat Mixte Baie de Somme - an Engineering consulting firm*, Abbeville, Bay of Somme, France.

description Management project : monitoring sediments transfers following new infrastructure construction in a highly -urbanized beach area (Quend, France)

- Monitoring of the installation of a innovative sand storage technique in a beach area
- Field acquisition and processing of topographical data
- Monitoring of the dunes system response using field apps
- Reporting to political offices
- Integrate those results at a larger spatial scale within a team

Scientific Presentations and Publications

Presentations

2018 **AGU Fall Meeting**, *Talk*, Washington D.C., USA.

'Spatially-Explicit Predictions of Floodplain Sedimentation Using Mixed Empirical/Processed-Based Models of Increasing Complexity '

2016 **ESA Living Planet Symposium**, *Poster presentation*, Prague, Czech Republic.

'13 years of temporal evolution of the 'Mare a poule d'Eau' landslide on La Reunion island using optical SPOT-5 images correlation - Preliminary results'

2015 **AGU Fall Meeting**, *Poster presentation*, San Francisco, USA.

'Cinematic and geomorphological study of the Mare a Poule d'Eau landslide (Hell-bourg, la Reunion island) using satellite (SPOT-5) and aerial images'

2014 **EGU**, *Oral presentation*, Vienna, Austria.

'Erosive effects of the tropical storms HELENA (1963) and JEANNE (2004) on Basse-Terre island, Guadeloupe (France)'

2013 **Image Mining Workshop**, *Barcelonnette, France*.

2013 **Earth Observation Workshop**, *University of Leicester, UK*.

Publications

Le Bivic, R., Allemand, P., Quiquerez, A., Delacourt, C. **Potential and Limitation of SPOT-5 Ortho-Image Correlation to Investigate the Cinematics of Landslides: The Example of "Mare à Poule d'Eau" (Réunion, France)**. *Remote Sensing*, 2017, 9(2).

Jaud, M., Passot, S., Le Bivic, R., Delacourt, C., Grandjean, P., Le Dantec, N. **Assessing the Accuracy of High Resolution Digital Surface Models Computed by PhotoScan® and MicMac® in Sub-Optimal Survey Conditions**. *Remote Sensing*, 2016, 8(6).

Languages

French Mother tongue

English Fluent spoken and written