# Thomas Kleyntssens | Curriculum Vitæ

Département de Mathématiques, Université de Liège
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## Work Experience

**Institut Saint-Michel**  **Verviers**
*Professor*  *09/2016 - 06/2017*
In charge of the course "informatique général (2h)" for the Secondary 5 students.

**MATh.en.JEANS Belgique**
*Supervisor, Institut Saint-Michel (Verviers) and DIC College (Liège)*  *Since 09/2014*
Raise awareness among teenager to the scientific research.

**Department of Mathematics - University of Liege**  **Liege**
*PhD Student (supervisor : Samuel Nicolay)*  *Since 10/2012*
Researcher in the team "Analysis, Functional Analysis and Wavelets" on the multifractal analysis.

**Department of Mathematics - University of Liege**  **Liege**
*Teaching assistant*  *Since 10/2012*
In charge of the tutorials of the following courses:
- Bachelor - Analysis I
- Bachelor - Mathematical software (since 09/2015)
- Bachelor - Logic and mathematical approach of programming
- Bachelor - Introduction to numerical analysis
- Bachelor - Analysis III
- Bachelor - Promoter for the course "Project" (since 09/2016)
- Master - Measure Theory

**ASBL Entr'aide**  **Verviers**
*Supervisor*  *2012-2014 and since 01/2017*
In charge of several groups of teenager to help them in their courses of mathematics.

**Management School - University of Liege**  **Liege**
*Teaching assistant*  *2011–2012*
In charge of the tutorials of the following course:
- Bachelor - Introduction of informatic

## Education

**University of Liege**  **Liege**
*Master of Sciences Mathematics, Belgium*  *2009–2011*
with highest distinction and jury congratulations.

**University of Liege**  **Liege**
*Bachelor of Sciences Mathematics, Belgium*  *2006–2009*
with great distinction.

## Prize

**Prize "Henri Garnir"**  **Liege**
*awarded by the "Association des Docteurs et Licenciés en Sciences Mathématiques de l'Université de Liège".*  *09/2011*

## Publications

**2017**:
- T. Kleyntssens, C. Esser, and S. Nicolay. An algorithm for computing non-concave multifractal spectra using the $S^\nu$ spaces. Submitted.
- A. Deliège, T. Kleyntssens, and S. Nicolay. Mars topography investigated through the Wavelet Leaders Method: A multidimensional study of its fractal structure. Planetary and Space Science, 136, 46-58, 2017.
  `https://doi.org/10.1016/j.pss.2016.12.008`

**2016**:
- A. Deliège, T. Kleyntssens, and S. Nicolay. The Fractal Nature of Mars Topography Analyzed via the Wavelet Leaders Method. Springer Proceedings: *13th International Conference on Information Technology : New Generation*, Advances in Intelligent Systems and Computing, 448, Las Vegas, Nevada, USA, 2016, ISBN : 978-3-319-32466-1.
- C. Esser, T. Kleyntssens, and S. Nicolay. A multifractal formalism for non-concave and non-increasing spectra: The leaders profile method. *Applied and Computational Harmonic Analysis*, 2016. `http://dx.doi.org/10.1016/j.acha.2015.12.006`.

**2012**:
- T. Kleyntssens, S. Limbourg, and M. Schyns. Automatic Cargo Load Planning: Special shipments. *ILS 2012 Proceedings*, 2012.

## Conferences

**2016**:
- T. Kleyntssens, and S. Nicolay. Raffinement de l'estimation asymptotique de l'exposant de Hölder. *Journées du GDR Analyse Multifractale*, Avignon, France.

**2015**:
- T. Kleyntssens. Les algorithmes et le traitement de l'image. Invitation to speak at the closing party of *Liège Créative*.
- T. Kleyntssens, E. Vandomme, M. Rigo, and S. Nicolay. Use of the wavelet theory as a tool to investigated the $l$-abelian complexity of a sequence. *Fractals and Related Fields III*, Porquerolles, France.

**2014**:
- T. Kleyntssens, and S. Nicolay. De l'importance des échelles dyadiques dans les espaces $S^\nu$. *Journées du GDR Analyse Multifractale*, Orlean, France.
- T. Kleyntssens, and S. Nicolay. A generalization of the $S^\nu$ spaces: getting rid of dyadic scales. *Workshop on Functional Analysis Valencia 2015 on the occasion of the 60th birthday of José Bonet*, Valancia, Spain.
- T. Kleyntssens, C. Esser, and S. Nicolay. Detection of non concave and non increasing multifractal spectra using wavelet leaders (Part II). *Contact group "Wavelets and Applications"*, Brussels, Belgium.
- T. Kleyntssens, C. Esser, and S. Nicolay. A new multifractal formalism based on wavelet leaders: detection of non concave and non increasing spectra (Part II). *Fractal Geometry and Stochastics V*, Tabarz, Germany.

**2013**:
- T. Kleyntssens, and S. Nicolay. $S^\nu$ Spaces, from Theory to Practice. *1st Nord Pas de Calais/Belgium conference*, Valencienne, France, Mons, Belgium.
- T. Kleyntssens, and S. Nicolay. Mise en oeuvre du formalisme multifractal sur les espaces $S^\nu$. *Colloque GDR Multifractales 2013*, Porquerolles, France.
- T. Kleyntssens, and S. Nicolay. Implementation of the Multifractal Formalism on $S^\nu$ Spaces. *Fourth PhD-Day*, Brussels, Belgium.

### Peer Reviewed

**2015**:
- T. Kleyntssens, and S. Nicolay. The leaders profile method: detection of distinct processes in a signal. *XXV ème Colloque Gretsi*, Lyon, France, 2015.

**2012**:
- M. Schyns, S. Limbourg, and T. Kleyntssens. Chargement de marchandises dans un avion cargo: le cas des marchandises nécessitant des précautions particulières. *13ème Congrès de la Société française de Recherche Opérationnelle et d'Aide à la Décision (ROADEF)*, Angers, France, 2012.
- T. Kleyntssens, S. Limbourg, and M. Schyns. An Integer Programming model for air transport of hazardous and special shipments. *26th annual conference of the Belgian Operations Research Society*, Brussels, Belgium, 2012.

**2011**:
- M. Schyns, S. Limbourg, and T. Kleyntssens. Chargement d'un avion cargo : le cas des marchandises nécessitant des précautions particulières. *3ème Colloque international "Systèmes Industriels et Logistiques"*, Casablanca, Maroc, 2011.

## Jury Member in Master Thesis Defenses

- L. Reynaerts. Ensembles paradoxaux et paradoxe de Von Neumann, 2016.
- B. Tassin. Travail de fin dÉtudes: les nombres p-adiques, 2015.
- M. Georgou. Population Dynamics: Analysis of Systems of Differential Equations, 2014.

# Skills

## Languages

**French**: Mother tongue.

**English**: Intermediate level.

## Informatics

**Languages**:
- Good knowledge: C++, Java (SWING), C (SDL).
- Notions: PHP, JavaScript, MySQL, Python.

**Website**:
- Web developer for the website of the Belgian branch of MATh.en.JEANS (since 2016)
  `www.mej.ulg.ac.be`
- Administrator for the website of the mathematics branch of the Graduate College Science (since 2013)
  `www.graduatecollegescience.be.`
- Web developer for the website of the mathematics students of the University of Liege (2009-2011).

**Softwares**: Mathematica, Geogebra, Sage, R.

**Others**: Linux (Debian and Ubuntu), LaTeX.

# Others

- Organizer of the formation LaTeX 2015 and LaTeX 2016 of RED (PhD Candidate Network).
- Representative of the scientific Staff at the Council of the Faculty of Sciences (since Septembre 2015).
- Representative of the PhD students at the Department of Mathematics (since September 2014).
- Member of the American Mathematical Society (since December 2015) and of the Belgian Mathematical Society (since September 2013).