Publications and scientific presentations

Hanna Uscka-Wehlou   [August 26, 2010]

1. LIST OF REVIEWED JOURNAL PAPERS:

07-1 Uscka-Wehlou, Hanna, 2007. Digital lines with irrational slopes. *Theoretical Computer Science* **377**, 157–169.

09-1 Uscka-Wehlou, Hanna, 2009. Run-hierarchical structure of digital lines with irrational slopes in terms of continued fractions and the Gauss map. *Pattern Recognition* **42**, 2247–2254.

09-2 Uscka-Wehlou, Hanna, 2009. Two equivalence relations on digital lines with irrational slopes. A continued fraction approach to upper mechanical words. *Theoretical Computer Science* **410** (38–40), 3655–3669.

10-1 Uscka-Wehlou, Hanna, 2010. Continued fractions, Fibonacci numbers, and some classes of irrational numbers. To appear in *Acta Mathematica Academiae Paedagogicae Nyíregyháziensis* **26(1)**.

2. LIST OF REVIEWED CONFERENCE PAPERS:

08-1 Uscka-Wehlou, Hanna, 2008. Continued Fractions and Digital Lines with Irrational Slopes. In D. Coeurjolly et al. (Eds.): *Proceedings of the 14th International Conference on Discrete Geometry for Computer Imagery DGCI 2008*, LNCS **4992**, pp. 93–104.

08-2 Uscka-Wehlou, Hanna, 2008. A run-hierarchical description of upper mechanical words with irrational slopes using continued fractions; 15 pp. In *Proceedings of 12th Mons Theoretical Computer Science Days (Mons, Belgium), 27–30 August 2008.* http://www.jmit.ulg.ac.be/jm2008/index-en.html.
Preprint: http://wehlou.com/hania/files/uu/mons08rev.pdf.

09-3 Uscka-Wehlou, Hanna, 2009. Sturmian words with balanced construction; 12 pp. In *Proceedings of Words 2009, the 7th International Conference on Words (Salerno, Italy), 14–18 September 2009.* http://words2009.dia.unisa.it/accepted.html.
Preprint: http://wehlou.com/hania/files/uu/words2009.pdf.

3. REVIEW PAPERS, CHAPTERS IN BOOKS, BOOKS:

Uscka-Wehlou, Hanna, 2009. *Digital Lines, Sturmian Words, and Continued Fractions.* Ph.D. Thesis, 152 pp. In *Uppsala Dissertations in Mathematics* **65**. ISBN: 978-91-506-2090-0.

4. PATENTS: no.

5. PUBLICLY AVAILABLE SOFTWARE WRITTEN BY ME:

00-1 Uscka, Hania, 2000. *Complexe getallen* (Complex numbers; a *Mathematica* notebook, in Dutch). An interactive electronical textbook for students from VUB (The Flemish University of Brussels, Belgium), which I designed and programmed while working for the project Exploot led by Professor Ivan Cnop. Now it is used as teaching material for the students from VUB and can be found on the home page of Exploot: http://we.vub.ac.be/exploot/lesmateriaal/welcome_NS.html (click on *Fourier en complexe analyse* in the vertical bar on the left-hand side of the page).

01-1 Uscka, Hania, 2001. *Complexe veeltermen* (Complex polynomials; a *Mathematica* notebook, in Dutch). An interactive electronical textbook for students from VUB (The Flemish University of Brussels, Belgium), which I designed and programmed while working for the project Exploot led by Professor Ivan Cnop. Now it is used as teaching material for the students from VUB and can be found on the home page of Exploot: http://we.vub.ac.be/exploot/lesmateriaal/welcome_NS.html (click on *Fourier en complexe analyse* in the vertical bar on the left-hand side of the page).

01-2 Uscka, Hania, 2001. *Complexe getallen en de meetkunde* (Complex numbers and geometry; a *Mathematica* notebook, in Dutch). An interactive electronical textbook for students from VUB (The Flemish University of Brussels, Belgium), which I designed and programmed while working for the project Exploot led by Professor Ivan Cnop. Published on my personal home page:
http://wehlou.com/hania/index.htm (the last item down on the page).

6. POPULAR SCIENCE PAPERS AND PRESENTATIONS:

- 2004-03-14: Lina Zacharias' interview with me *Hania forskar i digital geometri* has been published on the home page of the Education TV *Jorden är platt*.
- 2004-11-15–16: Presentation *Digital lines* during the FMB-FMD Open House Conference, Uppsala University.
- 2008-11-07–08: Sonja Kovalevskydagarna at Uppsala University: I was a workshop leader for the workshop called *Groups* and I was a member of the problem-solving group.

7. SCIENTIFIC PRESENTATIONS:

- 2003-12-15: Presentation *Digital lines* at the Seminar of the Centre for Image Analysis, Uppsala.
- 2005-01-24: Presentation *Theory of digital lines* at the Seminar of the Centre for Image Analysis, Uppsala.
- 2008-04-16–18: The 14th International Conference on Discrete Geometry for Computer Imagery, DGCI 2008 (Lyon, France). Poster and a short oral presentation *Continued Fractions and Digital Lines with Irrational Slopes*.

- 2008-08-27–30: The 12th Mons Theoretical Computer Science Days, JM 2008 (Mons, Belgium). Conference talk *A run-hierarchical description of upper mechanical words with irrational slopes using continued fractions.*
- 2009-09-14–18: The 7th International Conference on Words, Words 2009 (Salerno, Italy). Conference talk *Sturmian words with balanced construction.*
- 2009-09-25: Presentation of my Ph.D. thesis *Digital Lines, Sturmian Words, and Continued Fractions* at Uppsala University. The faculty Opponent: Dr. Damien Jamet (Nancy); the members of the Grading Committee: Dr. Petter Brändén (Stockholm University and the Royal Institute of Technology), Docent Rikard Bögvad (Stockholm University), Professor Isabelle Debled-Rennesson (Laboratoire Lorrain de Recherche en Informatique et ses Applications, Nancy), Professor Anders Heyden (Lund University), and Docent Warwick Tucker (Uppsala University).
- 2009-10-27: Presentation *Classes of irrational numbers defined by their continued fraction expansions* at the Seminar *Automorfizmy i derywacje* in the Faculty of Mathematics and Computer Science of the Copernicus University in Toruń, Poland.
- 2009-12-02: Presentation *Some combinatorial problems related to digital straight lines with irrational slopes and to balanced aperiodic words* at the Combinatorics Seminar at KTH, the Royal Institute of Technology, Stockholm, Sweden.
- 2010-02-22–25: A scientific visit at the Faculty of Mathematics and Computer Science of the Copernicus University in Toruń, Poland. Discussions about the project *Mathematical methods in modeling and analysis of concurrent systems* and a workshop on Petri nets and traces organized by the group *Formal Languages and Concurrency.*
- 2010-07-19–23: Workshop MASYW 2010 (Mathematical methods in modeling and analysis of concurrent systems) in Tleń (Poland) organized by the research group *Formal Languages and Concurrency* in the Faculty of Mathematics and Computer Science of the Copernicus University in Toruń, Poland.