

Background material for the Annual Reports 2003—2006

All years combined. Preliminary version

This is a preliminary version, pending information on how the Triannual Report 2004—2006 shall be organized. The categories are those used in the earlier Annual Reports.

Here all years are combined. I also have a version with all years separated.

Name: Christer Kiselman

1. Committee assignments

1.1. International commissions

Rector, International Congress University at the Universal Congress of Esperanto held in Göteborg, Sweden, 2003-07-26—08-02.

Secretary of the Commission for the International Congress University (Vilnius, Florence, Yokohama), 2005[— 2007].

1.2. Committee assignments at the national level

Member of the steering group for the Graduate School in Mathematics with Specialization in Mathematics Education, financed by the Bank of Sweden Tercentenary Foundation, 2000—2003-12-31.

Director, Graduate School in Mathematics and Computing, 2001-02-01—2006-04-30.

Member of the *Mathematics Delegation (Matematikdelegationen)*, appointed by the Government of Sweden, 2003-03-11—2004-09-27. Report delivered to the Government of Sweden on 2004-09-27.

Member of the working group under the Mathematics Delegation for the school years 11 and 12 and the university-level studies.

Member of the working group under the Mathematics Delegation for adult education and vulgarization.

Deputy Auditor, The Royal Swedish Academy of Sciences, 2003-01-01—12-31.

1.3. Committee assignments within Uppsala University

Member, Committee for Technical Education (Tekniska utbildningsnämnden, TUN) 2002-07-01—2005-06-30.

Member, Board of the Centre for Image Analysis, 2003-01-01—2006-12-31.

Member, the Language Group of the Faculty of Science and Technology, Uppsala University, 2003-06-10—2006-04-30.

Deputy Member, Program Committee for the Engineering Program in Engineering Physics, Uppsala University, 2003-09-14—2005-06-30.

Chair, Steering Group for the Open House Program of the Department of Mathematics, 2003. The Open House was held on 2003-03-29.

2. Visitors

Host for Jean Serra, *École des Mines de Paris*, Fontainebleau, 2003 Celsius lecturer of the Faculty of Science and Technology, 2003-02-10—17.

Host for Atsuhiko Eida, School of Computer Science, Tokyo University of Technology, 2003-09-07—13.

Host for Christian Ronse, *Université Louis Pasteur*, Strasbourg, 2005-01-15–20.

Host for Damien Jamet, *Université de Montpellier II*, 2005-02-22–28.

Host for Byunghyun Oh, Pohang University of Science and Technology (POSTECH), 2006-06-23–29.

3. Publications

3.1. Research articles

Convex functions on discrete sets. I: *Combinatorial Image Analysis. 10th International Workshop, IWCIA 2004; Auckland, New Zealand, December 1–3, 2004; Proceedings*. R. Klette och J. Žunić (Eds.). Lecture Notes in Computer Science **3322** (2004), ss. 443–457.

Subharmonic functions on discrete structures. *Harmonic Analysis, Signal Processing, and Complexity. Festschrift in Honor of the 60th Birthday of Carlos A. Berenstein*. Progress in Mathematics, Vol. 238, 67–80. Irene Sabadini, Daniele C. Struppa, David F. Walnut, Eds., 2005, xi + 162 pp. ISBN: 0-8176-4358-3. Boston, Basel, Berlin: Birkhäuser.

Functions on discrete sets holomorphic in the sense of Isaacs, or monodiffric functions of the first kind. *Science in China, Series A, Mathematics* **48** (2005), Supplement, 86–96.

Enkonduko al distribucioj [Introduction to distributions]. *Acta Sanmarinensia* VI.4, 105–132, (2007).

3.2. Other publications

A toast proposed by Christer O. Kiselman [Speech at the occasion of a conference in honor of Józef Siciak, Bielsko-Bialawa, September 2001]. *Annales Polonici Mathematici* **80**, (2003), 19–20.

La geometrio de la komputila ekrano. [The geometry of the computer screen]. In: *Internacia Kongreso Universitato*, pp. 1–12. (Ed. Michela Lipari.) Rotterdam: Universala Esperanto-Asocio, 2003. 83 pp.

Sam Svensson och Ormen Friske [Sam Svensson and the *Ormen Friske*]. An appendix in: Rune Edberg, *Vikingaskeppet Ormen Friskes undergång. Ett drama i det kalla krigets skugga. [The loss of the Viking Ship Ormen Friske. A Drama in the Shadow of the Cold War]*, pp. 273–291. Huddinge: Södertörn Archaeological Studies 2, 2004, 291 pp.

Vem bär ansvaret för byggfusk? [Who is responsible for shoddy workmanship?] *Universen*, Nr. 6, 2004-05-27, p. 3. [Ursprunglig titel: Arbetsmiljön på Uppsala universitet – eller 40 centimeter från döden. *Original title: The working environment at Uppsala University—or 40 centimeters from death.*]

The Swedish Mathematics Delegation. In: *Stockholm Intelligencer*, 8–9. Springer-Verlag 2004.

Opening address. In: *Educating for the Future. Proceedings of an International Symposium on Mathematics Teacher Education*. Preparation of Mathematics Teachers for the Future, Malmö University, Sweden, 5–7 May 2003, pp. 7–8. (Eds. Rudolf Strässer, Gerd Brandell, Barbro Grevholm, Ola Helenius.) Stockholm: The Royal Swedish Academy of Sciences, 2004.

Matematikens två språk [The two languages of mathematics]. *Medlemsblad*, Nr. 11, June 2005, pp. 21–42, published by Svensk förening för matematikdidaktisk forskning.

Kulturens kraft [The force of culture]. In: *Det matematiska kulturarvet* (Ed. Gunnar Berg), pp. 71–74. Dialoger 71-72, 2005. ISSN 0283-5207, ISBN 91-975060-4-4.

Christer Kiselman, Sven Halldin, Ulf Danielsson, Karin Carlson, Amalia Mattsson, and Martin Rutberg. “Svenska språket dör ut på landets universitet” [“The Swedish language is dying at the country’s universities”]. *Dagens Nyheter* 2005-06-17, page 6.

Amalia Mattsson, Christer Kiselman, Karin Carlson, Martin Rutberg, Sven Halldin, and Ulf Danielsson. Utbildningens internationalisering och demokratin [The internationalization of education, and democracy]. *Quartilen, Svenska statistikersamfundets tidskrift*, Vol. 20, No. 3, p. 15–16, September, 2005.

4. Reports, lecture notes, etc.

Digital Geometry and Mathematical Morphology, lecture notes for the course with the same name, Spring Semester 2004, 94 pp. Available on the web.

Specialkurs i matematik NV1, notes for the Honors Course in Mathematics NV1, Fall Semester, 2004, 34 pp. Available on the web.

Convex functions on discrete sets. Uppsala University, Department of Mathematics, Report 2004:32.

Subharmonic functions on discrete structures. Uppsala University, Department of Mathematics, Report 2004:41, 15 pp.

Functions on discrete sets holomorphic in the sense of Isaacs, or monodiffic functions of the first kind. Uppsala University, Department of Mathematics, Report 2005:5.

Matematikens två språk [*The two languages of mathematics*]. Report 2005:25. Uppsala University, Department of Mathematics 2005. 16 pp.

5. Editorial work

Member of the Editorial Board of *Mathematical Physics, Analysis and Geometry*, Springer (November, 1993 – present).

Editor of the international scientific journal *Esperantologio / Esperanto Studies*, 1999 [– present]. Issue No. 3 was published both in printed and in electronic form in 2005.

Editor, *Symposium on Communication Across Cultural Boundaries; Simpozio pri interkultura komunikado*, Göteborg 2003. 157 pp. Dobřichovice: Kava-Pech.

Editor of the report *The Graduate School in Mathematics and Computing: Report 2001–2006*. 84 pp. Uppsala University, April 2006.

6. Seminars

Co-organizer of the Pluricomplex Seminar. [See Bullen.] Men minst två föredrag fattas där under *Plurikomplexa seminariet*:

Roman Novikov talade 2003-11-11: *Non-abelian Radon transform and applications*.

Viktor Palamodov talade 2003-11-11: *Reconstruction from data on ray integrals*.

Organizer of the Seminar on Digital Geometry and Mathematical Morphology. [See Bullen.]

7. Participation in conferences, research visits, talks, etc. at other universities

Participated and gave two talks at the conference *Mathematics Programmes of East African Universities*, Nairobi, 2003-03-18–20.

Participated and delivered the opening address at the symposium *Preparation of Mathematics Teachers for the Future*, held in Malmö 2003-05-05–07.

Invited speaker at the international conference *Nordan 7*, held in Visby 2003-05-23–25.

Participated in the conference *Matematikdidaktik – forskning och praxis*, held in Sigtuna 2003-06-04–05.

Participated in the *88th Universal Congress of Esperanto*, Göteborg, 2003-07-26–08-02. Delivered a lecture in the International Congress University of the congress.

Participated as president of the Program Committee and main organizer of the *Symposium on Communication Across Cultural Boundaries*, Göteborg 2003-08-02–03.

Visit for the Mathematics Delegation to the Freudenthal Institute, Utrecht, 2003-11-27.

Visit for the Mathematics Delegation to the *Ministère de l'Éducation Nationale*, Paris, 2003-11-28.

Visit to *Centre de Morphologie Mathématique, École de Mines de Paris*, Fontainebleau, 2003-11-29–30.

Invited speaker at the conference *A Celebration of Carlos Berenstein's Mathematics: Harmonic Analysis, Signal Processing and Complexity*. George Mason University, Fairfax, Virginia, 2004-05-17–20.

- Invited speaker at a conference organized by the Nordic Council of Ministers at Voksenaasen, Oslo: *Engelsken og dei nordiske språka på høgskolor og universitet [English and the Nordic Languages at Universities]*, 2004-06-07–08.
- International Conference on Analysis in Several Complex Variables*, Sundsvall, 2004-06-21–24.
- Fourth European Congress of Mathematics*, 4ECM, Stockholm, 2004-06-27–07-02.
- 89th Universal Congress of Esperanto*, Beijing, 2004-07-24–31.
- Invited lecturer in a workshop organized by the Morningside Mathematical Center, Chinese Academy of Sciences, Beijing, 2004-07-21–08-21; participated 2004-08-01–21.
- Invited lecturer at the *First International Conference on Several Complex Variables and Complex Geometry, China SCVCG1*, Beijing, 2004-08-23–27.
- Invited lecturer at the international conference *Real Analytic and Complex Analytic Methods in Functional Analysis* at Sabancı Üniversitesi, Tuzla, İstanbul, Turkey, 2004-09-20–24.
- Lecturer at the *Tenth International Workshop on Combinatorial Image Analysis (IWCIA)*, Auckland 2004-12-01–03.
- Participated with a lecture in *Complex Days of the North*, Reykjavík, Iceland 2005-01-04–05.
- Participated in the *24th Nordic and 1st Franco-Nordic Congress of Mathematicians*, Reykjavík, Iceland 2005-01-06–09. Member of the Scientific Committee.
- Participated in the international conference *Discrete Geometry for Computer Imagery (DGCI)*, Poitiers, 2005-04-13–15.
- Participated in the *International Symposium on Mathematical Morphology, ISMM*, Paris, 2005-04-18–20.
- Participated in the international conference *Nordan 9*, Sigtuna, 2005-04-22–24.
- Participated (with several presentations) in the *90th Universal Congress of Esperanto*, Vilnius, 2005-07-23–30.
- Participated in the international conference *Bi- and Multilingual Universities*, Helsinki, 2005-09-01–03. Work presented by Karin Carlson.
- Invited speaker at the international conference *Conference in Honor of Henri Skoda*, Paris 2005-09-12–16.
- Participated as a member of the Reference Group of the *International Science Programme, ISP* in a visit to Saint-Louis and Dakar, Sénégal, and gave a talk, 2005-09-19–24.
- Visit to Mid Sweden University, Sundsvall, on the occasion of the thesis defense of Tao Feng, 2005-10-24.
- Visit to *École Supérieure d'Ingénieurs en Électronique et Électrotechnique, ESIEE*, Val-de-Marne, 2005-12-12 and 2005-12-14–15.
- Visit to Le Laboratoire d'Informatique, de Robotique et de Microélectronique de Montpellier (LIRMM), Université Montpellier II, 2005-12-13–14.
- Visit to Karlstad University on the occasion of the thesis defense of Mirala Cristina Vinerean, 2005-12-16.
- Invited scientist at Pohang University of Science and Technology (POSTECH): 2006-03-04–19. Several lectures there.
- Invited to Université Louis Pasteur, Strasbourg 2006-05-10–13. Two lectures.
- Participated in the international conference *Nordan 10*, Sundsvall 2006-05-19–21.
- Invited lecturer at *International Conference on Several Complex Variables*, Beijing, 2006-06-05–09.
- Participated in *International Workshop on Combinatorial Image Analysis*, Berlin 2006-06-18–21.
- Participated in the *91st Universal Congress of Esperanto*, Florence, Italy, 2006-07-29–08-05.
- Invited lecturer at the twentieth anniversary of *Groupe Inter-Africain de Recherche en Analyse, Géométrie et Applications (GIRAGA)*, Yaoundé, Cameroon, 2006-09-09–13.
- Invited lecturer at the *First Africa–Sweden Conference on Mathematics*, Yaoundé, Cameroon, 2006-09-14–16.
- Participated in the international conference *Digital Geometry for Computer Imagery*, Szeged, 2006-10-24–27.

Invited scientist at Uniwersytet Jagielloński, Kraków 2006-12-03–10. Lecture 2006-12-04.
Lecture at Polska Akademia Umiejętności (Polish Academy of Arts and Sciences) 2006-12-06.
Visit at Université Paul Sabatier, Toulouse, 2006-12-11–15. Lecture there 2006-12-14.

8. Professional service outside Uppsala University (as expert, editor, referee, reviewer, member of scientific societies, etc.)

8.1. Expert

Deputy Member of the Grading Committee for Hans Rullgård's Ph.D. thesis defense at Stockholm University on 2003-11-10.
Expert at the Royal Academy of Sciences for an application for research cooperation between Sweden and the former Soviet Union. Report 2004-11.
Chairman of the Grading Committee for Per Sundqvist's Ph.D. thesis defense at Uppsala University on 2005-05-13.
External referee for a promotion to the rank of Professor at The University of Western Ontario, London, Ontario, Canada. Report 2005-07-11.
Member of the jury and rapporteur for the Doctoral Dissertation of Damien Jamet, Université de Montpellier II, 2005-12-13.
Expert for the evaluation of the research of a person at *École Supérieure d'Ingénieurs en Électronique et Électrotechnique, ESIEE*, May 2006.
Chairman of the Grading Committee for Jan Erik Solem's Ph.D. thesis defense at Malmö University on 2006-09-29.
Assessor for a promotion to the rank of Associate Professor at The University of Adelaide, 2006-10-14.
Expert at the Royal Academy of Sciences for an application for research cooperation between Sweden and the former Soviet Union; report 2006-11-06.
Member of the jury and rapporteur at Université Paul Sabatier for the habilitation of Stéphanie Nivoche, 2006-12-13.

8.2. Research cooperation

Research cooperation with Stockholm University: Julius Borcea and Shiva Samieinia (since 2005-09-09).

8.3. Referee reports

2003.1 *Mathematische Annalen*.
2003.2. *Manuscripta Mathematica*.
2003.3. *Discrete Applied Mathematics*.
2004.1. *Discrete Applied Mathematics, DGCI Special issue*.
2004.2–2004.6. *Lecture Notes in Computer Science* **3322**. Five reports.
2004.7. *Acta Mathematica Sinica*.
2004.8–2004.11. *Lecture Notes in Computer Science*, DGCI Poitiers, 2005-04-13–15. Four reports.
2004.12. *Pattern Recognition Letters*, Elsevier.
2006.1. *Topology and its applications*.
2006.2–2006.6. *Lecture Notes in Computer Science*. Five reports.
2006.7. *Acta Mathematica Sinica*.
2006.8. *Journal of Mathematical Analysis and Applications*.
2006.9. *Arkiv för matematik*.

8.4. Services in the national and international scientific communities

Professor at *Akademio Internacia de la Sciencoj*, San Marino, 1984 – present.
Member, Section on Grammar, Academy of Esperanto, 1989–2007.

- Member, Section on General Vocabulary, Academy of Esperanto, 1989–2007.
 Chairman, The Mittag-Leffler Foundation (appointed by the King of Sweden) 1997 through June 30, 2003.
 Vice President, Academy of Esperanto, 1998–2004.
 Member, Section on Pronunciation, Academy of Esperanto, 1999–2007.
 Member of the Organizing Committee of the international research symposium *Preparation of Mathematics Teachers for the Future*, held in Malmö 2003-05-05–07.
 President of the Program Committee for the *Symposium on Communication Across Cultural Boundaries*, held in Göteborg 2003-08-02–03.
 Member of the Scientific Committee of the *International Conference on Analysis in Several Complex Variables*, held in Sundsvall 2004-06-21–24.
 Member of the Organizing Committee for 4ECM, *Fourth European Congress of Mathematics*, held in Stockholm 2004-06-27–07-02.
 Member of the Organizing Committee for the *First International Conference on Several Complex Variables and Complex Geometry, China SCVCG1*, held in Beijing 2004-08-23–27.
 Member of the Program Committee for IWCIA, *Tenth International Workshop on Combinatorial Image Analysis*, held in Auckland 2004-12-01–03.
 Member of the Scientific Committee for the *24th Nordic and 1st Franco-Nordic Congress of Mathematicians*, held in Reykjavík, 2005-01-06–09.
 Member of the Program Committee, *Discrete Geometry for Computer Imagery (DGCI)*, held in Poitiers 2005-04-13–15.
 Chairman of the Matts Essén Foundation, 2005 – present.
 Member of the Organizing Committee, *Conference in Honor of Henri Skoda*, held in Paris 2005-09-12–16.
 Member of the Organizing Committee, *Rolf Schock Prize Meeting in Mathematics*, held in Stockholm 2005-10-26.
 Scientifically responsible for the theme *Géométrie discrète et combinatoire* in the international conference *GeoNet*, to be held in Porto-Novo, Benin, 2007-06-10–17.
 Member of the Program Committee for the *International Symposium on Mathematical Morphology, ISMM*, to be held in Rio de Janeiro, 2007-10-14–21.

8.5. Memberships in academies and learned societies

Academies:

- Member, Royal Academy of Arts and Sciences, Uppsala, 1983 – present.
 Member, Royal Society of Sciences, Uppsala, 1984 – present.
 Member, Internacia Scienca Akademio Comenius, 1986 – present.
 Member, Academy of Esperanto, 1989 – 2007.
 Member, Royal Swedish Academy of Sciences, 1990 – present.
 Member, Polish Academy of Arts and Sciences (Polska Akademia Umiejętności, PAU), 2002 – present.

Learned societies:

- Member, Swedish Astronomical Society, 1954 – present (life member).
 Member, Swedish Mathematical Society, 1960s – present (life member).
 Member, American Mathematical Society, 1966 – present (life member).
 Member, Société Mathématique de France, 1960s – present.
 Member, European Mathematical Society, 1990s – present.
 Uppsala humanistiska samfund.

9. Awards, prizes, special events, miscellaneous

- At a ceremony at the Polish Embassy in Stockholm, the diploma of membership in the Polish Academy of Arts and Sciences was handed over by the Ambassador of the Republic of Poland, Marek Prawda, on 2003-06-10. Acceptance speech in Polish read by Hania Uscka-Wehlou.
 The first Matts Essén scholarship awarded to Salla Franzén, 2005-05-09.

Presentation of the work of Louis Caffarelli, the recipient of the Rolf Schock Prize, 2005-10-27.
The second Matts Essén scholarship awarded to Lina Jansson, 2006-05-09.

10. Teaching and thesis advising

10.1. Undergraduate education

2003

Spring Semester: Distribution Theory D (a special course).

Fall Semester: Specialkurs i matematik NV1 [Honors Course in Mathematics, NV1].

2004

Spring Semester: Digital Geometry and Mathematical Morphology, Lecture Notes.

Fall Semester: Specialkurs i matematik NV1 [Honors Course in Mathematics, NV1].

2005

Spring Semester: Specialkurs i matematik NV2 [Honors Course in Mathematics, NV2].

Fall Semester: Specialkurs i matematik NV1 [Honors Course in Mathematics, NV1].

10.2. Graduate education

2003

Spring Semester: Distribution theory (a special course).

Ill-Posed problems (a new course).

The Pluricomplex Seminar.

Fall Semester: The Pluricomplex Seminar.

2004

Spring Semester: Digital Geometry and Mathematical Morphology, Lecture Notes.

The Pluricomplex Seminar.

The seminar on Digital Geometry and Mathematical Morphology.

Fall Semester: The Pluricomplex Seminar.

The seminar on Digital Geometry and Mathematical Morphology.

2005

Spring Semester: The Pluricomplex Seminar.

The seminar on Digital Geometry and Mathematical Morphology.

Fall Semester:

Partial Differential Equations (4 credit points) and

Partial Differential equations D (6 credit points).

The Pluricomplex Seminar.

The seminar on Digital Geometry and Mathematical Morphology.

2006

Spring Semester:

The Pluricomplex Seminar.

The Seminar on Digital Geometry and Mathematical Morphology.

Fall Semester: The Pluricomplex Seminar.

The Seminar on Digital Geometry and Mathematical Morphology.

10.3. Thesis advising

Principal Ph.D. Thesis advisor for Ola Weistrand (joint with Gunilla Borgefors and Örjan Smedby; from 2000-01-05). Finished successfully with a Ph.D. degree on 2006-03-24.

Master's Thesis advisor for Erik Melin; thesis (20 credit points) presented on 2003-06-06. Title: *Connectedness and Continuity in Digital Spaces with the Khalimsky Topology*.

Principal Ph.D. Thesis advisor for Erik Melin (joint with Gunilla Borgefors and Mikael Passare) 2003-07-01–2006-04-30. *Filosofie Licentiate Diploma* 2005-01-19. Formally second advisor from 2006-05-01.

Principal Ph.D. Thesis advisor for Hania Uscka-Wehlou (joint with Gunilla Borgefors and Mikael Passare) 2003-07-01–2006-04-30. Formally second advisor from 2006-05-01.

Master's Thesis advisor for Sara Nordström, Fall of 2003; thesis (20 credit points) presented on 2003-12-15. Title: *Sömnadens geometri* [*The Geometry of Seams*].

Second Ph.D. Thesis advisor for Beyram Torbrand (principal advisor Johan Tysk).

Third Ph.D. Thesis advisor for Robin Strand (principal advisor Gunilla Borgefors; second advisor Stina Svensson).

Master Thesis advisor for Abtin Daghighi, Fall of 2004 and Spring of 2005. Thesis defended on 2005-04-08.

11. The Third Task

Leader of a national project to create a book on terminology in mathematics in Swedish with emphasis on the schools and teacher education. The project is financed by the National Center for Mathematics Education. 2001 — present.

Invited lecture at a national conference on the theme *Läs- och skrivsvårigheter och matematisk förmåga*. Title of lecture: *Matematikens språk – språkens matematik* [*The Languages of Mathematics—the Mathematics of Languages*], 2003-10-23.

Invited lecture at a national conference on the theme *Living Mathematics*. Title of the lecture: *Datorskärmens geometri* [*The Geometry of the Computer Screen*], 2003-11-21.

Participated with two lectures at Biennalen in Malmö, the most attended mathematics conference in Sweden, 2004-01-22–24: *Vad betyder kvot?* [*What is the meaning of the word quotient?*], and *Datorskärmens geometri* [*The Geometry of the Computer Screen*].

Invited speaker at the public meeting of *Dialogseminariet, Det matematiska kulturarvet* [*The Mathematical Cultural Heritage*], Dramaten, Stockholm: *Kulturens kraft* [*The Force of Culture*], 2004-03-21

Invited participant at a workshop on mathematics and society organized by the Mathematics Delegation in the Almega Building, Stockholm, 2004-03-22.

Was interviewed in Esperanto on 2004-08-25 at *China Radio International*. The interview was broadcast twice, in August and September, 2004.

Was interviewed in French on 2004-08-25 at *Radio Chine Internationale* on the topic of *L'Éducation technique et les mathématiques*. The interview was broadcast in the program *La Science et l'Éducation* on 2004-09-09.

Invited lecturer at the public meeting of *Språkförsvaret* [The Language Defense]: *Svenskan ställning inom högskolan* [*The position of the Swedish language at the Swedish universities*], 2005-11-13.

Participated with two lectures in *Biennalen* in Malmö 2006-01-26–27: *Matematik – dialog – respekt – ett besvärligt föredrag* [*Mathematics—dialogue—respect—a troubling lecture*] (with Håkan Lennerstad and Mia Selander), and *Ny terminologibok i matematik för skolbruk* [*A new book on terminology for schools*] (with Lars Mouwitz).