IEEE Circuits and Systems Society
Analog Signal Processing Technical Committee

Annual Activity Report
2001-2002

The Analog Signal Processing Technical Committee (ASPTC) of the IEEE Circuits and Systems Society focuses on the theory, analysis, design, and practical implementation of analog circuits, and the application of analog circuit theoretic techniques to system and signal processing, ranging from basic scientific theory to industrial application. Information on the committee can be found on the world-wide web at http://www.ieee-cas.org/~asptc/.

Committee members are renowned experts in analog signal processing who are both committed to, and active within, the ASP field. The committee currently has 48 members. In 2001, Rob Fox took over from Gert Cauwenberghs as chair, and Tuna Tarim from Gert Cauwenberghs as vice-chair. Hanspeter Schmid remained as web coordinator and secretary.

The year 2001-2002 was again very successful for ASP. The following summarizes CASS-related activity by the committee and its members.

1. ISCAS'2002

As usual for ISCAS, the Analog Circuits track will play a dominant role in ISCAS'2002 (http://www.iscas2002.org), and almost all ASPTC members assisted in the technical program. Last year's ASPTC chair Gert Cauwenberghs acted as ISCAS'2002 Analog track chair, coordinating the reviews of over 370 papers submitted in the Analog track, of which 264 papers were selected for the final program. These numbers represent about one quarter of all ISCAS papers submitted and accepted. Note that there were 186 Analog track papers at ISCAS 2001, and 168 in 2000. A total of 977 reviews were collected this year.

Many regular sessions at ISCAS'2002 will be chaired by ASPTC members, as listed below. (Even more ASPTC members will serve as session co-chairs.)

Sessions sponsored by Analog Signal Processing:

1022	Circuit Linearization	Andreas Andreou
1023	Delta-Sigma Modulators I	Angel Rodriguez-Vazquez
1024	Adaptive Circuits	Andre van Schaik
1025	Floating-Gate Circuits	Bradley Minch
1026	Low-Voltage Amplifiers	Edgar Sanchez-Sinencio
1027	Switched-Capacitor Filters	Francisco Duque-Carrillo
1028	RF Mixers	Felix Lustenberger
1029	Self-Correcting ADC	Gert Cauwenberghs
1030	Digital-to-Analog Conversion	Georges Gielen
1031	ADC Characterization	Gordon Roberts
1032	Delta-Sigma Modulators II	Gabor Temes
1033	Reference Circuits	Hanspeter Schmid

1034	Circuit Theory and Applications	Igor Filanovsky
1035	Biomedical Circuits	Julius Georgiou
1036	Gm-C Filters	John Harris
1037	Current-Mode Circuits	Apisak Worapishet
1038	Fast-Settling Amplifiers	Jaime Ramirez-Angulo
1039	Comparators	Jesper Steensgaard
1040	Vision Chips	Orly Yadid-Pecht
1041	Analog VLSI and Neuromorphic Systems	Paul Hasler
1042	Tuning Circuits I	P. R. Mukund
1043	Translinear and Companding Filters	Rob Fox
1044	Continuous-Time Delta-Sigma Modulation	Tor Sverre Lande
1045	Analog Computing Circuits	Tadashi Shibata
1046	Filter Theory and Linear Networks	Tuna Tarim
1047	Pipelined ADC	Un-Ku Moon
1048	RF Filter Systems	Wouter Serdijn
1049	RF Filter Circuits	Yichuang Sun
1050	Integrated Inductors	Yichuang Sun
1051	Operational Amplifiers	Hanspeter Schmid
1052	Oscillators and Phase Locking	Igor Filanovsky
1053	Active Filters	John Harris
1054	Tuning Circuits II	P. R. Mukund
1055	Sample-and Hold Circuits	Jesper Steensgaard
1056	Analog Testability	Tuna Tarim

Sessions sponsored by other technical committees chaired by ASP members:

1013	Smart Sensors 1(Special Session)	Orly Yadid-Pecht
1111	Design and Analysis of Oscillators	Douglas Frey
1223	Nanoelectronics Poster I	Andreas Andreou

ASPTC sponsored the following special sessions and tutorials at ISCAS'2002:

Special Sessions:

| 1229 | Digital Methods for Improving $\Delta\Sigma$ Performance | Gabor Temes |
| 1234 | Electronic Design for Quality | Tuna Tarim |

Full-Day Tutorial:

| Floating gate devices, circuits and systems | Paul Hasler, Bradley Minch, Tadashi Shibata, Tor Sverre Lande, Gert Cauwenbergs |

2. ISCAS 2003

Many ASPTC members are members of the Organizing Committee for next year's ISCAS:

General Co-Chairs: S. Pookaiyaudoum, C. Toumazou; Secretary Board: J. Ngarmnil; Technical Committee: T. Lande (Chair), G. Cauwenbergs, G. Gielen, E. Sanchez; Technical Session Chair: Andreou; US/Canada Liason: John Choma; Europe Liason: W. Serdijn

3. Other Conferences and Meetings

Members of ASPTC are active in organizing and coordinating several other conferences and meetings in the CAS field. The following is just a sample.

IEEE 44th Midwest Symposium on Circuits and Systems (MWSCAS 2001) Dayton, Ohio, August 2001
    (http://www.mwscas.org/)
    Organizing committee: Mohammed Ismail, Tuna Tarim
    Steering committee: Philip Allen, Andreas Andreou, Peter Aronhime, John Choma, Igor
    Filanovsky, Randall Geiger, Mohammed Ismail, Jaime Ramirez-Angulo, Edgar Sanchez-Sinencio

IEEE Custom Integrated Circuits Conference (CICC) (http://www.ieee-cicc.org/)
    Un-Ku Moon, Technical Committee

IEEE Bipolar/BiCMOS Circuits and Technologies Meeting (BCTM) (http://www.ieee-bctm.org/)
    Rob Fox, Technical Committee, Executive Committee, Short-Course Chair

IEEE Solid-State Circuits Society Workshop on Low Power Circuits, Arlington, VA, October 2001
    Un-Ku Moon, Co-Organizer

Neural Information Processing Systems Conference (NIPS) (http://www-2.cs.cmu.edu/~nips/)
    Gert Cauwenberghs: Program Committee, Track Chair for Implementation, NIPS 2001,
    Track Chair for Emerging Technologies, NIPS 2002

International Conference on Information Systems, Analysis and Synthesis, July 2001
(http://www.iiis.org/sci/)
    Special Session on Signal Processing and Fault Diagnosis, Y. Sun, Co-Organizer

4. Editorial Boards and Publications

Members of ASPTC are active on editorial boards of IEEE and CAS-related journals and transactions, in organizing special journal issues, and in promoting ASP and CAS in other publications. The following is a sample:

Journals:

IEEE Transactions on Circuits and Systems II: Analog and Digital Signal Processing)
(http://edgar.ucsd.edu/tcas-ii/)
    Deputy Editor-in-chief: Georges Gielen
    Associate editors: Andreas Baschirotto, Gert Cauwenberghs, Gabor Temes

Analog Integrated Circuits and Signal Processing, Int. J. (Kluwer Academic,
http://www.wkap.nl/journalhome.htm/0925-1030)
    Editor-in-chief: Mohammed Ismail
    Mixed signal letters editor: Tuna B. Tarim
    Editorial board: Philip Allen, Peter Aronhime, John Choma, Randall Geiger, Georges Gielen,
      Tor Sverre Lande, Kenneth Martin, Angel Rodriguez-Vazquez, Edgar Sanchez-Sinencio,
      Wouter Serdijn, Gabor Temes, Chris Toumazou.

IEE Proceedings: Circuits Devices and Systems (http://www.iee.org/Publish/Journals/Profjourn/Proc/cds)
  Special Issue on RF Circuits and systems for Wireless Communications
  Special Issue Editor: Yichuang Sun

Neural Networks (International Neural Network Society) (http://www.inns.org/nn.html)
  Associate editor: Andreas Andreou

IEEE Transactions on Neural Networks (http://www.ewh.ieee.org/tc/nnc/pubs/tnn
  Special Issue on Neural Networks Hardware Implementations
  Guest Editors: Andreas Andreou, Tadashi Shibata

IEEE Sensors Journal (http://www.ewh.ieee.org/tc/sensors/Sensors_journal.htm)
  Associate editor: Gert Cauwenberghs
  Special Issue on Multisensor Systems and Signal Processing, Gert Cauwenberghs, Guest Editor:

Following is a sample of books written by ASP members:

Books:

  Bosco Leung, *VLSI for Wireless Communication*, Prentice Hall, 2002
  Yichuang Sun, Ed., *Design of High Frequency Integrated Analogue Filters, IEE Press, UK, 2002.*

5. CAS Distinguished Lecturers

The following CAS Distinguished Lecturers (http://www.ieee-cas.org/dlp.html) are members of ASPTC:

  Andreas Andreou
  Terri Fiez
  Georges Gielen
  Ramesh Harjani
  Ken Martin
  Gordon Roberts
  Angel Rodriguez-Vazquez
  Gabor Temes

6. 2002-2003 Planned Activities

ASPTC remains strongly committed to promote CAS interests in the ASP field, and assist with organizing and coordinating CASS-sponsored activities, such as ISCAS'2003. We will continue to seek close working relationships with other CASS technical committees in co-organizing events of inter-disciplinary nature, as we have done for special sessions and tutorials at ISCAS and MWSCAS in recent years. To this end, many members of ASPTC are also members on other CASS technical committees including Biomedical, CCNAC, Communications, Neural Systems, Nonlinear, Sensors, and VLSI. Finally, our committee plans to contribute a proposed set of technical guidelines for authors and standards for reviewers to improve the quality and selection of papers submitted to CASS meetings such as ISCAS.

Rob Fox, Chair
April 20, 2002