

1 List of Publications

- [1] Phan Anh Dung and M.R. Hansen. Program declaratively and execute on a multi-core platform: A case study based on Presburger Arithmetic. Extended Abstract. 2011. Submitted
- [2] M.R. Hansen and H. Rischel. Functional Programming using F#. Manuscript. Technical University of Denmark, 2011
- [3] M.R. Hansen, M. K. Jakobsen and J. Madsen. Modelling of Energy Harvesting Aware Wireless Sensor Networks. Chapter in *Sustainable Energy Harvesting Technologies: Past, Present and Future* InTech 2011 (to appear)
- [4] M.R. Hansen and A.W. Brekling. On Tool Support for Duration Calculus on the basis of Presburger Arithmetic. Proc. of TIME'2011, pp. 115 - 122, IEEE 2011
- [5] T. Ovatman, A.W. Brekling, M.R. Hansen. Analysis for Embedded Systems: Experiments with Priced Timed Automata. Electronic Notes in Theoretical Computer Science, vol: 238(6), pp. 81-95, Elsevier, 2010
- [6] M.K. Jakobsen, J. Madsen and M.R. Hansen. DEHAR: a Distributed Energy Harvesting Aware Routing Algorithm for Ad-hoc Multi-hop Wireless Sensor Networks. in IEEE International Symposium on a World of Wireless, Mobile and Multimedia Networks (WoWMoM 2010), pages: 1-9, IEEE 2010, IEEE
- [7] J. Madsen, M.R. Hansen, and A.W. Brekling. *Model-Based Design for Embedded Systems*, chapter A modelling and analysis framework for embedded systems. CRC Press, 2010, pages 121 - 145.
- [8] N. Schultz-Møller, C. Hølmer, and M.R. Hansen. *Software and Data Technologies*, Chapter Declarative Business Process Modelling and the Generation of ERP systems. Communications in Computer and Information Science, Vol. 47. Springer 2009, pages 134 - 146.
- [9] M.R. Hansen. Efficient Model Checking for a Hybrid Duration Calculus. In proc. of International Workshop on Hybrid Logic and Applications (HyLo 2010). 2010.
- [10] M. Fränzle and M.R. Hansen. Efficient model checking for duration calculus. International Journal of Software and Informatics, Vol.3, no.2-3, pp. 171-196, 2009
- [11] A.W. Brekling, M.R. Hansen and J. Madsen. MoVES - A Framework for Modelling and Verifying Embedded Systems. In proceedings of The 21st International Conference on Microelectronics, Marrakech, Morocco, 2009, pages 143 - 146, IEEE 2009
- [12] M.R. Hansen and A.W. Brekling (Editors). Proceedings of the 21st Nordic Workshop on Programming Theory (NWPT'09). DTU Informatics, Technical University of Denmark, 2009

- [13] G. Sauter, H. Dierks, M. Fränzle and M.R. Hansen. *Leight-weight hybrid model checking facilitating online prediction of temporal properties*. In proceedings of the 21st Nordic Workshop on Programming Theory (NWPT'09). DTU Informatics, Technical University of Denmark, 2009, pages 20-23.
- [14] W.P. Heise, M. Fränzle and M.R. Hansen. *A prototype model checker for Duration Calculus*. In proceedings of the 21st Nordic Workshop on Programming Theory (NWPT'09). DTU Informatics, Technical University of Denmark, 2009, pages 26-29.
- [15] M.K. Jakobsen, M.R. Hansen and J. Madsen. *Formal Verification of an energy aware routing algorithm*. In proceedings of the 21st Nordic Workshop on Programming Theory (NWPT'09). DTU Informatics, Technical University of Denmark, 2009, pages 32-35.
- [16] A.W. Brekling, M.R. Hansen and J. Madsen. *Analysis of Quantitative Properties of Hardware Specifications*. In proceedings of the 21st Nordic Workshop on Programming Theory (NWPT'09). DTU Informatics, Technical University of Denmark, 2009, pages 92-95.
- [17] G. Sauter, H. Dierks, M. Fränzle and M.R. Hansen. *Light-weight hybrid model checking facilitating online prediction of temporal properties*. Technical report, Carl von Ossietzky Universität Oldenburg, 2009. <http://imost.informatik.uni-oldenburg.de>.
- [18] M.R. Hansen. *Logics of Specification Languages*, chapter Duration Calculus, pages 291–341. EATCS: Monographs in Theoretical Computer Science. Springer-Verlag, 2008.
- [19] M.R. Hansen and J.T. Kristensen. *Reflections on the Teaching of Programming*, volume 4821 of *LNCS*, chapter Experiences with Functional Programming in an Introductory Curriculum, pages 30–46. Springer-Verlag, 2008.
- [20] A.W. Brekling, M.R. Hansen and J. Madsen. Models and formal verification of multi-processor system-on-chips. *Journal of Logic and Algebraic Programming*, 77:1–19, 2008.
- [21] M. Fränzle and M.R. Hansen. Efficient model checking for duration calculus based on branching-time approximations. In Antonio Cerone and Stefan Gruner, editors, *Sixth IEEE International Conference on Software Engineering and Formal Methods (SEFM 2008)*, pages 63–72. IEEE, 2008.
- [22] J. Madsen, M.R. Hansen, K.S. Knudsen, J.E. Nielsen and A.W. Brekling. System-level verification of multi-core embedded systems using timed automata. In *17th World Congress International Federation of Automatic Control*, pages 9302–9307, 2008.
- [23] A.W. Brekling, M.R. Hansen and J. Madsen. Formal verification of design properties of hardware architectures. (poster). In *DATE'08 University Booth*, 2008.
- [24] N. Schultz-Møller, C. Hølmer, and M.R. Hansen. Generation of erp systems from rea specifications. In *Third International Conference on Software and Data Technologies*, volume Information Systems and Data Management, pages 12–19. INSTICC, 2008.
- [25] C. Sellberg, M.R. Hansen and P. Fischer. Faults analysis in distributed systems: Quantitative estimation of reliability and resource requirements. In *Third International Conference on Software and Data Technologies*, volume Software Engineering, pages 45–52. INSTICC, 2008.

- [26] T. Ovatman, A.W. Brekling and M.R. Hansen. Analysis of costs of embedded systems: experiments with priced timed automata. In *Formal Foundations of Embedded Software and Component-Based Software Architectures (FESCA@ETAPS)*, volume (To appear in ENTCS.), 2008.
- [27] P. Larsen, M.R. Hansen and J. Madsen. Towards traceability in descriptive software models. In *Nordic Workshop and Doctoral Symposium on Dependability and Security*, pages 63–72. Dept. of Computer Science, Tallinn University of Technology, 2008.
- [28] M.R. Hansen and Dang Van Hung. A Theory of Duration Calculus with Application. Chapter in *Domain Modelling and the Duration Calculus*, volume 4710 of *LNCS*, pages 119–176. Springer-Verlag, 2007.
- [29] M.R. Hansen, J. Madsen, and A.W. Brekling. Semantics and Verification of a Language for Modelling Hardware Architectures. Chapter in *Formal Methods and Hybrid Real-Time Systems*, volume 4700 of *LNCS*, pages 300–319. Springer-Verlag, 2007.
- [30] A.W. Brekling, M.R. Hansen and J. Madsen. Hardware modelling language and verification of design properties. In Einar Broch Johnsen, Olaf Owe, and Gerodo Schneider, editors, *NWPT’07/FLACOS’07*, volume Research Report, pages 49–51. Institute for Informatics, University of Oslo, 2007.
- [31] R. Sharp and M.R. Hansen. Timed traces and strand spaces. In M. Volkov V. Dickert and A. Voronkov, editors, *CSR 2007*, volume 4649 of *LNCS*, pages 373–386. Springer-Verlag, 2007.
- [32] M. Fränzle and M.R. Hansen. Deciding an interval logic with accumulated durations. In O. Grumberg and M. Huth, editors, *TACAS 2007*, volume 4424 of *LNCS*, pages 201–215. Springer-Verlag, 2007.
- [33] T. Bolander, J. Hansen and M.R. Hansen. Decidability of a hybrid duration calculus. *Electronic Notes in Theoretical Computer Science*, 174(6):113–133, jun 2007.
- [34] J. Ellebæk, K. S. Knudsen, A. Brekling, M. R. Hansen, and J. Madsen. MOVES - a tool for modeling and verification of embedded systems. In *DATE’07 University Booth*, apr 2007.
- [35] T. Bolander, J. Hansen and M. R. Hansen. Decidability of a hybrid duration calculus. In *HyLo 2006*, pages 104–123, 2006.
- [36] A.W. Brekling, M.R. Hansen and J. Madsen. A timed-automata semantics for a system-level mpsoc model. In *Nordic Workshop on Programming Theory*. Reykjavik University, 2006.
- [37] J. Enslev, A.-S. Nielsen, M. Fränzle and M.R. Hansen. Bounded model construction for duration calculus. In Neil D. Jones, editor, *Proceedings of the 17th Nordic Workshop on Programming Theory*, 2005.
- [38] M. Fränzle and M.R. Hansen. A robust interpretation of duration calculus. In Dang Van Hung and Martin Wirsing, editors, *Theoretical Aspects of Computing – ICTAC 2005*, volume 3722 of *LNCS*, pages 257–271. Springer-Verlag, 2005.

- [39] Zhou Chaochen and M.R. Hansen. *Duration Calculus: A Formal Approach to Real-Time Systems*. EATCS: Monographs in Theoretical Computer Science. Springer, 2004.
- [40] C. Jones and M.R. Hansen. Special issue on duration calculus. *Formal Aspects of Computing*, 16(2), 2004.
- [41] M.R. Hansen. Duration calculus. Chapter in Branislav Rovan Martin Henson and Dines Bjørner, editors, *Summer school in Logics og Formal Specification Languages*, pages 364–385, 2004.
- [42] M. Fränzle and M.R. Hansen. A robust interpretation of duration calculus. In Paul Pettersson and Wang Yi, editors, *Proceedings of the 16th Nordic Workshop on Programming Theory*, pages 83–85, 2004.
- [43] R. Sharp and M.R. Hansen. Timed traces and strand spaces. In Paul Pettersson and Wang Yi, editors, *Proceedings of the 16th Nordic Workshop on Programming Theory*, pages 96–98, 2004.
- [44] T.B.Jensen, T.K. Tolstrup and M.R. Hansen. Generating web-based systems from specifications. In *The 19th ACM Symposium on Applied Computing (SAC 2004)*, volume 2, pages 1647 – 1653. ACM Press, 2004.
- [45] H. Pilegaard, M.R. Hansen and R. Sharp. An approach to analyzing availability properties of security protocols. *Nordic Journal of Computing*, 10:337–373, 2003.
- [46] M.R. Hansen and R. Sharp. Using interval logics for temporal analysis of security protocols. In Michael Backes, David Basin, and Michael Waidner, editors, *First ACM Workshop on Formal Methods in Security Engineering (FMSE'03)*, pages 24–31. ACM Press, 2003.
- [47] M.R. Hansen. Duration calculus (extended abstract). In Valentin Goranko and Angelo Montanari, editors, *Workshop on Interval Logics and Duration Calculi, ESSLLI'03*, pages 66–84, 2003. Invited Talk.
- [48] H. Pilegaard, M.R. Hansen and R. Sharp. Using interval logic and isabelle/hol for analyzing real-time properties of security protocols. In J. Vain and Tarmo Uustalu, editors, *The 14th Nordic Workshop on Programming Theory*, pages 84–86. Onstitute of Cybernetics, Tallinn Technical University, 2002.
- [49] M. Haaveraan and M.R. Hansen. Selected papers of the 13th nordic workshop on programming theory (nwpt'01). *Nordic Journal of Computing*, 9(4), 2002.
- [50] S. Larsen and M.R. Hansen. Systematic design and implementation of web-based systems. In *International Symposium on Telecommunications - IST2001*, pages 38–41. ITRC, 2001.
- [51] J.T. Kristensen, M.R. Hansen and H. Rischel. Teaching object-oriented programming on top of functional programming. In *Frontiers in Education (FIE'01)*, pages 15–20. IEEE, 2001.
- [52] M.R. Hansen, editor. *The 13th Nordic Workshop on Programming Theory*, number IMM2001-0840. Technical University of Denmark, IMM, 2001.

- [53] M.R. Hansen and H. Rischel. *Introduction to Programming using SML*. Addison Wesley Longman, 1999.
- [54] M.R. Hansen, J.T. Kristensen and H. Rischel. A theory-based introductory programming course. In *Frontiers in Education (FIE'99)*, volume 1, pages "11b4–25 — 11b4–30". IEEE, 1999.
- [55] J. Lichtenberg, M.R. Hansen and H. Rischel. Modelling invoicing using sml. In M. Allemand, C. Attiogbe, and H. Habrias, editors, *Int. Workshop on: Comparing Systems Specificationn Techniques - "What questions are prompted by ones particular method of specification"*, pages 297 – 311. ERIN, Nantes, 1998.
- [56] M.R. Hansen, editor. *Duration Calculus: A Logical Approach to Real-Time Systems*. DFKI Saarbrücken, 1998.
- [57] T. Hoffmann, M.B. Petersen, H. Rischel and M.R. Hansen. Traces in pc/dc. In Michael R. Hansen, editor, *Proc. of the 10th European Summer School in Logic Language and Information (ESSLLI'98) Workshop on Duration Calculus*, pages 69–78. DFKI Saarbrücken, 1998.
- [58] Hongyan Sun and M.R. Hansen. Events in duration calculus. In Michael R. Hansen, editor, *Proc. of the 10th European Summer School in Logic Language and Information (ESSLLI'98) Workshop on Duration Calculus*, pages 133–140. DFKI Saarbrücken, 1998.
- [59] M.R. Hansen and Zhou Chaochen. Duration calculus: Logical foundations. *Formal Aspects of Computing*, 9:283–330, 1997.
- [60] M. Kaaramees and M.R. Hansen. From design specifications to parallel implementations. In M. Haveeraaen and O. Owe, editors, *Selected papers from the 8th Nordic Workshop on Programming Theory*, pages 129–138, 1997.
- [61] Zhou Chaochen and M.R. Hansen. Chopping a point. In *BCS-FACS 7th Refinement Workshop*, Electronic Workshops in Computing. Springer-Verlag, 1996. <http://www.springer.co.uk/ewic/workshops/7RW/>.
- [62] Zhou Chaochen and M.R. Hansen. An adequate first order logic of intervals. In Hans Langmaack Willem-Paul de Roever and Amir Pnueli, editors, *Compositionality: The Significant Difference*, volume 1536 of *LNCS*, pages 584–608. Springer-Verlag, 1996.
- [63] S. Mørk, J.C. Godskesen, M.R. Hansen and R. Sharp. A timed semantics for sdl. In R. Gotzhein and J. Bredereke, editors, *Formal Description Techniques IX: Theory, application and tools*, pages 295–309. Chapman & Hall, 1996.
- [64] M.R. Hansen, P.K. Pandya and Zhou Chaochen. Finite divergence. *Theoretical Computer Science*, 138:113–139, 1995.
- [65] Z. Liu, M. R. Hansen, J. Madsen and J. P. Brage. Real-time semantics for data flow graphs, 1995.
- [66] M.R. Hansen. Model-checking discrete duration calculus. *Formal Aspects of Computing*, 6A:826–845, 1994.

- [67] Jifeng He, C.A.R. Hoare, M. Fränzle, M. Müller-Olm, E.-R. Olderog, M. Schenke, M.R. Hansen, A.P. Ravn and H. Rischel. Provably correct systems. In H. Langmaack, W.-P. de Roever, and Jan Vytopil, editors, *Formal Techniques in Real-Time and Fault-Tolerant Systems*, volume 863 of *LNCS*, pages 288–335. Springer-Verlag, 1994.
- [68] Zhou Chaochen, M.R. Hansen and P. Sestoft. Decidability and undecidability results for duration calculus. In P. Enjalbert, A. Finkel, and K. W. Wagner, editors, *STACS'93*, volume 665 of *LNCS*, pages 58–68. Springer-Verlag, 1993.
- [69] Zhou Chaochen, A.P. Ravn and M.R. Hansen. An extended duration calculus for hybrid systems. In R. L. Grossman, A. Nerode, A. P. Ravn, and H. Rischel, editors, *Hybrid Systems*, volume 736 of *LNCS*, pages 36–59. Springer-Verlag, 1993.
- [70] M.R. Hansen and E-R. Olderog. Constructing circuits from decidable duration calculus. Technical report, Fachbereich Informatik, University Oldenburg, Germany, 1993.
- [71] M.R. Hansen, E.-R. Olderog, M. Schenke, M. Fränzle, B. von Karger, M. Müller-Olm and H. Rischel. A duration semantics for real-time reactive systems. Technical report, Report no. OLD MRH 1/1, ProCoS ESPRIT BRA 7071, Oldenburg University, Germany, 1993.
- [72] M.R. Hansen and Zhou Chaochen. Semantics and completeness of duration calculus. In J. W. de Bakker, C. Huizing, W.-P. de Roever, and G. Rozenberg, editors, *Real-Time: Theory in Practice*, volume 600 of *LNCS*, pages 209–225. Springer-Verlag, 1992.
- [73] M.R. Hansen, Zhou Chaochen and J. Staunstrup. A real-time duration semantics for circuits. In *TAU'92: 1992 Workshop on Timing Issues in the Specification and Synthesis of Digital Systems*, Princeton Univ., NJ. ACM/SIGDA, 1992.
- [74] M.R. Hansen. Duratin calculus and real-time trace specifications. In *Workshop on Assertionnal Methods*, pages 47–50. Univ. of Amsterdam, 1992.
- [75] Zhou Chaochen, M.R. Hansen, A.P. Ravn and H. Rischel. Duration specifications for shared processors. In J. Vytopil, editor, *Symposium on Formal Techniques in Real-Time and Fault Tolerant Systems*, volume 571 of *LNCS*, pages 21–32. Springer-Verlag, 1991.
- [76] M.R. Hansen and Zhou Chaochen. Specification & verification of higher order processes. In *Mathematical Foundations of Computer Science*, volume 452 of *LNCS*, pages 322–328. Springer-Verlag, 1990.
- [77] M.R. Hansen, B.S. Hansen, P. Lucas and P. van Emde Boas. Integrating relational databases and constraint languages. *Computer Languages*, 14(2):63–82, 1989.
- [78] M.R. Hansen. Algebraic optimization of recursive database queries. *INFOR*, 26(4):286–298, 1988.
- [79] M.R. Hansen. Algebraic optimization of recursive database queries. In *Intelligence Integration*, pages 223–230. Canadian Information Processing Society, 1987.
- [80] M.R. Hansen. *Non-Redundant Representation of Computations: The Integration of Equations and Relations*. PhD thesis, Department of Computer Science, DTU, 1987.

- [81] M.R. Hansen, B.S. Hansen, P. Lucas and P. van Emde Boas. Integrating constraint languages and relational databases. Computer Science RJ 4873, IBM Research Laboratory, San Jose, California, 1985.
- [82] B.S. Hansen and M.R. Hansen. Simple symbolic and numerical computations based on equations and inequalities. Computer Science RJ 4754, IBM Research Laboratory, San Jose, California, 1985.
- [83] B.S. Hansen, M.R. Hansen, U. Pletat and R. Studer. An abstract model of a distributed office system. In *First International Conference on Office Automation*. IEEE Computer Society Press, 1984.
- [84] P. Pistor, B.S. Hansen and M.R. Hansen. Eine sequelartige sprachschnittstelle für das nf2-modell. In J.W. Schmidt, editor, *Sprachen Für Datenbanken*, number 72 in Informatik-Fachberichte, 1983.
- [85] M.R. Hansen and B.S. Hansen. A generic application programming system. Master's thesis, Department of Computer Science, DTU, 1982.