

The Wayback Machine - <https://web.archive.org/web/20050325095726/http://www.homepages.inf.ed.ac.uk:80/kgoossen/www/research.html>

Kees Goossens's Research Page

I am interested in embedded systems (hardware and software), networks on chip (networks on silicon), embedded communication, communication protocols, embedded resource management (bandwidth, latency, memory, cpu cycles, and especially combinations of all of these). Prior topics of research that still enjoy my interest include high-level synthesis of hardware, digital signal processing, hardware verification, and semantics of hardware description languages. My thesis and various papers are available via this page.

Here is a [50 word](#) and [120 word](#) research biography, and a respectable [passport photograph](#) for work purposes.

Here is a list of my publications, in reverse chronological order. Note that the copyright on some of the files below may not be owned by me, please comply with the owner's conditions. Let me know if you have problems retrieving a file.

1. "Building Predictable Systems on Chip: An Analysis of Guaranteed Communication in the AEtheral Network on Chip"

Om Prakash Gangwal, Andrei Radulescu, Kees Goossens and Santiago Gonzalez Pestana, and Edwin Rijpkema. In Peter van der Stok, editor, Dynamic and Robust Streaming In and Between Connected Consumer-Electronics Devices. Kluwer, 2005.

[2005-philipsbook-chap1.pdf](#)

```
@InCollection{GangwalRadulescu05a,
  author = {Gangwal, Om Prakash and R\{u\{a\}dulescu, Andrei and Goossens, Kees and Gonz\{a\}lez Pestana, Santiago and Edwin Rijpkema},
  title = {Building Predictable Systems on Chip: An Analysis of Guaranteed Communication in the \AE\{t\}heral Network on Chip},
  booktitle = {Dynamic and Robust Streaming In And Between Connected Consumer-Electronics Devices},
  OPTpages = {},
  publisher = {Kluwer},
  year = {2005},
  editor = {van der Stok, Peter},
  chapter = {1},
  OPTmonth = {}
}
```

2. "Service-Based Design of Systems on Chip and Networks on Chip" Kees Goossens, Santiago Gonzalez Pestana, John Dielissen, Om Prakash Gangwal, Jef van Meerbergen, Andrei Radulescu, Edwin Rijpkema, and Paul Wielage. In Peter van der Stok, editor, Dynamic and Robust Streaming In And Between Connected Consumer-Electronics Devices. Kluwer, 2005.

[2005-philipsbook-chap2.pdf](#)

```
@InCollection{GoossensPestana:05,
  author = {Goossens, Kees and Gonz\{a\}lez Pestana, Santiago and Dielissen, John and Gangwal, Om Prakash and van Meerbergen, Jef and R\{u\{a\}dulescu, Andrei},
  title = {Service-Based Design of Systems on Chip and Networks on Chip},
  booktitle = {Dynamic and Robust Streaming In And Between Connected Consumer-Electronics Devices},
  OPTpages = {},
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  editor = {van der Stok, Peter},
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```

3. "A Design Flow for Application-Specific Networks on Chip with Guaranteed Performance to Accelerate SOC Design and Verification" Kees Goossens, John Dielissen, Om Prakash Gangwal, Santiago Gonzalez Pestana, Andrei Radulescu, and Edwin Rijpkema. Proceedings of Design, Automation and Test Conference in Europe, March 2005.

[2005-date.pdf](#) [2005-date-presentation.pdf](#)

```
@InProceedings{Goossens05b,
  author = {Goossens, Kees and Dielissen, John and Gangwal, Om Prakash and Gonz\{a\}lez Pestana, Santiago and R\{u\{a\}dulescu, Andrei and Rijpkema, Edwin},
  title = {A Design Flow for Application-Specific Networks on Chip with Guaranteed Performance to Accelerate SOC Design and Verification},
  booktitle = {Proc. Design, Automation and Test in Europe Conference and Exhibition (DATE)},
  OPTpages = {},
  year = {2005},
  month = mar
}
```

4. "An Event-based Network-on-Chip Monitoring Service" Calin Ciordas, Twan Basten, Andrei Radulescu, Kees Goossens, and Jef van Meerbergen, International High Level Design Validation and Test Workshop (HLDVT), November 2004.

[2004-hldvt.pdf](#) [2004-hldvt-presentation.pdf](#)

```
@InProceedings{Ciordas04a,
  author = {Ciordas, Calin and Basten, Twan, and R\{u\{a\}dulescu, Andrei and Goossens, Kees and van Meerbergen, Jef},
  title = {An Event-Based Network-On-Chip Monitoring Service},
  booktitle = {Proceedings of High-Level Design Validation and Test Workshop (HLDVT)},
  OPTpages = {},
  year = {2004},
  month = nov
}
```

5. "An Efficient On-Chip Network Interface Offering Guaranteed Services, Shared-Memory Abstraction, and Flexible Network Programming" Andrei Radulescu, John Dielissen, Santiago Gonzalez Pestana, Om Prakash Gangwal, Edwin Rijpkema, Paul Wielage, and Kees Goossens, IEEE Transactions on CAD of Integrated Circuits and Systems, 24(1), January 2005.

[2004-tcad.pdf](#)

```
@Article{RadulescuDielissen04tcad,
  author = {R\{u\{a\}dulescu, Andrei and Dielissen, John and Gonz\{a\}lez Pestana, Santiago and Gangwal, Om Prakash and Rijpkema, Edwin and Wielage, Paul},
  title = {An Efficient On-Chip Network Interface Offering Guaranteed Services, Shared-Memory Abstraction, and Flexible Network Programming},
  journal = {{IEEE} Transactions on {CAD} of Integrated Circuits and Systems},
  year = {2005},
  volume = {24},
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```

number = {1},
pages = {4--17},
month = jan

```

- 6 **An Efficient On-Chip Network Interface Offering Guaranteed Services, Shared-Memory Abstraction, and Flexible Network Programming"** Andrei Radulescu, John Dielissen, Kees Goossens, Edwin Rijpkema, and Paul Wielage, Proceedings of Design, Automation and Test Conference in Europe, February 2004. [2004-date-ni.pdf](#) [2004-date-ni-presentation.pdf](#)

```

@InProceedings{Radulescu04a,
  author = {Andrei R\{a\}dulescu and John Dielissen and Kees Goossens and Edwin Rijpkema},
  title = {An Efficient On-Chip Network Interface Offering Guaranteed Services, Shared-Memory Abstraction, and Flexible Network Programming},
  booktitle = {Proc. Design, Automation and Test in Europe Conference and Exhibition (DATE)},
  pages = {878--883},
  year = {2004},
  month = feb
}

```

- 7 **"Cost-Performance Trade-offs in Networks on Chip: A Simulation-Based Approach"** Santiago Gonzalez Pestana, Edwin Rijpkema, Andrei Radulescu, Kees Goossens, Om Prakash Gangwal, Proceedings of Design, Automation and Test Conference in Europe, February 2004. [2004-date-sim.pdf](#) [2004-date-sim-presentation.pdf](#)

```

@InProceedings{Gonzalez04a,
  author = {Gonz\{a\}lez Pestana, Santiago and Edwin Rijpkema and Andrei R\{a\}dulescu and Kees Goossens and Gangwal, Om Prakash},
  title = {Cost-Performance Trade-offs in Networks on Chip: A Simulation-Based Approach},
  booktitle = {Proc. Design, Automation and Test in Europe Conference and Exhibition (DATE)},
  pages = {764--769},
  year = {2004},
  month = feb
}

```

- 8 **Concepts and Implementation of the Philips Network-on-Chip"** John Dielissen, Andrei Radulescu, Kees Goossens, and Edwin Rijpkema. IP-Based SOC Design, Grenoble, November, 2003. [2003-ipsoc.pdf](#)

```

@InProceedings{Dielissen03a,
  author = {John Dielissen and Andrei R\{a\}dulescu and Kees Goossens and Edwin Rijpkema},
  title = {Concepts and Implementation of the {Philips} Network-on-Chip},
  booktitle = {{IP-Based SOC Design}},
  OPTpages = {},
  year = {2003},
  month = nov,
  OPTorganization = {IFIP workshop}
}

```

- 9 **Interconnect and Memory Organization in SOC's for advanced Set-Top Boxes and TV --- Evolution, Analysis, and Trends"** Kees Goossens, Om Prakash Gangwal, Jens Roeveer, A. P. Niranjana. In [Interconnect-Centric Design for Advanced SoC and NoC](#), Jari Nurmi, Hannu Tenhunen, Jouni Isoaho, Axel Jantsch, editors. Kluwer, April, 2004. [2004-interconnectcentric-chap15.pdf](#)

```

@InCollection{Goossens04a,
  author = {Kees Goossens and Gangwal, Om Prakash and Jens R\{o\}ever and A.\{a\}P. Niranjana},
  title = {Interconnect and Memory Organization in {SOC's} for advanced Set-Top Boxes and {TV} --- Evolution, Analysis, and Trends},
  booktitle = {Interconnect-Centric Design for Advanced SoC and NoC},
  pages = {399--423},
  publisher = {Kluwer},
  year = {2004},
  editor = {Jari Nurmi and Hannu Tenhunen and Jouni Isoaho and Axel Jantsch},
  chapter = {15},
  OPTedition = {},
  month = apr
}

```

- 1 **Bringing Communication Networks On Chip: Test and Verification Implications"** Bart Vermeulen and John Dielissen and Kees Goossens and Calin Ciordas, IEEE Communications Magazine, September, 2003. [2003-ieee-comm.pdf](#)

```

@Article{Vermeulen03a,
  author = {Bart Vermeulen and John Dielissen and Kees Goossens and Calin Ciordas},
  title = {Bringing Communication Networks On Chip: Test and Verification Implications},
  journal = {{IEEE} Communications Magazine},
  year = {2003},
  volume = {41},
  number = {9},
  pages = {74--81},
  month = sep,
  note = {Guest editors: Dimitris Gizopoulos and Rob Aitken},
  annote = {Special issue ``Testing and Verification of Communication System-on-Chip Devices''}
}

```

- 11 **"Trade Offs in the Design of a Router with Both Guaranteed and Best-Effort Services for Networks on Chip"** E. Rijpkema and K. Goossens and A. Radulescu, J. Dielissen and van Meerbergen, J. and P. Wielage and E. Waterlander, IEE Proceedings: Computers and Digital Technique, September 2003. [2003-iec.pdf](#)

```

@Article{Rijpkema03b,
  author = {E. Rijpkema and K. Goossens and A. R\{a\}dulescu, J. Dielissen and van Meerbergen, J. and P. Wielage and E. Waterlander},
  title = {Trade Offs in the Design of a Router with Both Guaranteed and Best-Effort Services for Networks on Chip},
  journal = {{IEEE} Proceedings: Computers and Digital Technique},
  year = {2003},
  volume = {150},
  number = {5},
  pages = {294--302},
}

```

month = sep

12. **"Communication Services for Networks on Silicon"** Andrei Radulescu and Kees Goossens, In [Domain-Specific Processors: Systems, Architectures, Modeling, and Simulation](#), Shuvra Bhattacharyya and Ed Deprettere and Juergen Teich, editors. Marcel Dekker, 2003.
[2003-samos.pdf](#) [2003-samos.ps](#)

```
@InProceedings{Radulescu03a,
  author = {R\{u\{a\}dulescu, Andrei and Goossens, Kees},
  title = {Communication Services for Networks on Chip},
  booktitle = {Domain-Specific Processors: Systems, Architectures, Modeling, and Simulation},
  publisher = {Marcel Dekker},
  chapter = {10},
  pages = {193--213},
  year = {2004},
  editor = {Bhattacharyya, Shuvra S. and Deprettere, Ed F. and Teich, J\{r\{g\}en},
  url = "RadulescuGoossens03.pdf",
}
```

13. **"Guaranteeing the quality of services in networks on chip"** Kees Goossens, John Dielissen, Jef van Meerbergen, Peter Poplavko, Andrei Radulescu, Edwin Rijpkema, Erwin Waterlander, and Paul Wielage, In [Networks on Chip](#), Axel Jantsch and Hannu Tenhunen, editors. Kluwer, March 2003.
[2003-networksonchip-chap4.pdf](#)

```
@InCollection{Goossens03a,
  author = {Kees Goossens and John Dielissen and van Meerbergen, Jef and Peter Poplavko and Andrei R\{u\{a\}dulescu and Edwin Rijpkema and Erwin W
  editor = {Axel Jantsch and Hannu Tenhunen},
  booktitle = {Networks on Chip},
  title = {Guaranteeing The Quality of Services in Networks on Chip},
  publisher = {Kluwer},
  year = {2003},
  pages = {61--82},
  publisher = {Kluwer},
  year = {2003},
  chapter = {4}
```

14. **"Trade offs in the design of a router with both guaranteed and best-effort services for networks on chip"** E. Rijpkema, K. G. W. Goossens, A. Radulescu, J. Dielissen, J. van Meerbergen, P. Wielage, and E. Waterlander, Proceedings of Design, Automation and Test Conference in Europe, March 2003.
[2003-date.pdf](#) [2003-date-presentation.pdf](#)

```
@InProceedings{Rijpkema03a,
  author = {E. Rijpkema and K. G. W. Goossens and A. R\{u\{a\}dulescu and J. Dielissen and van Meerbergen, J. and P. Wielage and E. Waterlander},
  title = {Trade Offs in the Design of a Router with Both Guaranteed and Best-Effort Services for Networks on Chip},
  booktitle = {Proc. Design, Automation and Test in Europe Conference and Exhibition (DATE)},
  pages = {350--355},
  year = {2003},
  month = mar
}
```

15. **"Networks on Silicon: Blessing or Nightmare?"** Paul Wielage and Kees Goossens, Euromicro Symposium On Digital System Design (DSD 2002), Dortmund, Germany, September 2002.
[2002-dsd.ps](#) [2002-dsd.pdf](#) [2002-dsd-presentation.pdf](#)

```
@InProceedings{Wielage02a,
  author = {Paul Wielage and Kees Goossens},
  title = {Networks on Silicon: Blessing or Nightmare?},
  booktitle = {Euromicro Symposium On Digital System Design},
  year = {2002},
  address = {Dortmund, Germany},
  month = sep,
  note = {Keynote speech}
}
```

16. **"C-HEAP: A Heterogeneous Multi-processor Architecture Template and Scalable and Flexible Protocol for the Design of Embedded Signal Processing Systems"** Andre Nieuwland, Jeffrey Kang, Om Prakash Gangwal, Ramanathan Sethuraman, Natalino Busa, Kees Goossens, Rafael Peset Llopis, and Paul Lippens, Design automation for Embedded Systems, Vol 7(3): 229--266, 2002, Kluwer.
[2002-daes.ps](#) [2002-daes.pdf](#)

```
@Article{Nieuwland02a,
  author = {Andr\{e\ Nieuwland and Jeffrey Kang and Om Prakash Gangwal and Ramanathan Sethuraman and Natalino Bus\{a\ and Kees Goossens and Rafae
  title = {{C-HEAP}: {A} Heterogeneous Multi-processor Architecture Template and Scalable and Flexible Protocol for the Design of Embedded Sig
  journal = {Design Automation for Embedded Systems},
  year = {2002},
  volume = {7},
  number = {3},
  pages = {233--270}
}
```

17. **"The Cost of Communication Protocols and Coordination Languages in Embedded Systems"** K.G.W. Goossens and O.P. Gangwal, Coordination'2002, York, April, 2002.
(C) Springer-Verlag, published in their [LNCS series](#).
[2002-coordination.pdf](#) [2002-coordination-presentation.pdf](#)

```
@InProceedings{Goossens02b,
  author = {K. G. W. Goossens and O. P. Gangwal},
  title = {The Cost of Communication Protocols and Coordination Languages in Embedded Systems},
  booktitle = {Coordination languages and models},
  pages = {174--190},
  year = {2002},
  editor = {Farhad Arbab and Carolyn Talcott},
  number = {2315},
  series = {Lecture notes in computer science},
}
```

month = apr,
publisher = {Springer Verlag}

- 18 **"Networks on Silicon: Combining Best-Effort And Guaranteed Services"** K. Goossens, J. van Meerbergen, A. Peeters, and P. Wielage, DATE 2002, Design automation and test conference, March, 2002.

[2002-date.ps](#) [2002-date.pdf](#) [2002-date-presentation.pdf](#)

```
@InProceedings{Goossens02a,
  author = {K. Goossens and van Meerbergen, J. and A. Peeters and P. Wielage},
  title = {Networks on Silicon: Combining Best-Effort and Guaranteed Services},
  booktitle = {Proc. Design, Automation and Test in Europe Conference and Exhibition (DATE)},
  pages = {423--425},
  year = {2002},
  month = mar
}
```

- 19 **"A Router Architecture for Networks on Silicon"** Edwin Rijpkema, Kees Goossens, and Paul Wielage, Progress 2001, second workshop on embedded systems, November, 2001

[2001-progress.ps](#) [2001-progress.pdf](#)

```
@inproceedings{Rijpkema01a,
  author = {Edwin Rijpkema and Kees Goossens and Paul Wielage},
  title = {A Router Architecture for Networks on Silicon},
  booktitle = {Proceedings of Progress 2001, 2nd Workshop on Embedded Systems},
  address = {Veldhoven, the Netherlands},
  month = oct,
  year = {2001}
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```

- 20 **"Towards a model for making a trade-off between QoS and costs"** Lodewijk T. Smit, Gerard J.M. Smit, Paul J.M. Havinga, Jos A. Huiskens, Kees G.W. Goossens, and John T.M.H. Dielissen, CTIT workshop, Mobile Communications: in perspective, February, 2001

[2001-ctit.ps](#) [2001-ctit.pdf](#)

```
@InProceedings{Smit01a,
  author = {Lodewijk T. Smit and Gerard J.M. Smit and Paul J.M. Havinga and Jos A. Huiskens and Kees G.W. Goossens and John T.M.H. Dielissen},
  title = {Towards A Model for Making A Trade-off Between {QoS} And Costs},
  booktitle = {Proceedings of the {CTIT} workshop. Mobile Communications in perspective},
  year = {2001},
  month = feb
}
```

- 21 **"A Protocol And Memory Manager For On-Chip Communication"** K. G. W. Goossens, International Symposium on Circuits and Systems, Sydney, Australia, May 2001.

[2001-iscas.ps](#) [2001-iscas.pdf](#)

```
@InProceedings{Goossens01a,
  author = {K. G. W. Goossens},
  title = {A Protocol And Memory Manager For On-Chip Communication},
  booktitle = {International Symposium on Circuits and Systems},
  pages = {225--228},
  year = {2001},
  volume = {II},
  address = {Sydney},
  month = {May},
  organization = {IEEE Circuits and Systems Society}
}
```

- 22 **"The Petrol Approach to High-Level Power Estimation"** R. Peset Llopis and K. G. W. Goossens, International Symposium on Low Power Electronics and Design, August 1998.

[1998-islpd.ps](#) [1998-islpd.pdf](#)

```
@InProceedings{Llopis98a,
  author = "R Peset Llopis and K. G. W. Goossens",
  title = "The {Petrol} Approach to High-Level Power Estimation",
  booktitle = "International Symposium on Low Power Electronics and Design",
  year = "1998",
  pages = "130--132",
  address = "Monterey, CA",
  month = aug
}
```

- 23 **"Reasoning About VHDL Using Operational and Observational Semantics"** K. G. W. Goossens, CHARME workshop, March 1995.

[1995-charme.ps](#) [1995-charme.pdf](#)

```
@InProceedings{Goossens95b,
  author = "K. G. W. Goossens",
  title = "Reasoning About {VHDL} Using Operational and Observational Semantics",
  editor = "Paolo E. Camurati and Hans Eveking",
  volume = "987",
  series = "Lecture Notes in Computer Science",
  pages = "311--327",
  booktitle = "Correct Hardware Design Methodologies",
  year = "1995",
  publisher = "Springer Verlag",
  month = oct
}
```

- 24 **"Reasoning About VHDL Using Operational and Observational Semantics"** K. G. W. Goossens, DSI technical report 95-06, April 1995
DSI technical report, extended version of 1995-charme.ps

[1995-dsireport-95-06.ps](#) [1995-dsireport-95-06.pdf](#)

```
@TechReport{Goossens95a,
  author = "K. G. W. Goossens",
  title = "Reasoning About {VHDL} Using Operational and Observational Semantics",
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  type = "Rapporto di Ricerca",
  number = "SI/RR 95/06",
  month = apr,
  year = "1995"
}
```

25. **"Structure and Behaviour in Hardware Verification"** K. G. W. Goossens, LFCS report 93-273, June 1993.

An extended version of 1993-hol.ps.

[1993-lfcsreport273.ps](#) [1993-lfcsreport273.pdf](#)

```
@TechReport{Goossens93g,
  author = "K. G. W. Goossens",
  title = "Structure and Behaviour in Hardware Verification",
  Institution= "LFCS, Department of Computer Science, University of Edinburgh",
  Number= "ECS-LFCS-93-273",
  Type= "LFCS Report Series",
  year= "1993",
  month = jul
}
```

26. **"The Formalisation of a Hardware Description Language in a Proof System: Motivation and Applications"** K. G. W. Goossens, LFCS report 93-269, June 1993

LFCS report version of 1993-semish.ps.

[1993-lfcsreport269.ps](#) [1993-lfcsreport269.pdf](#)

```
@TechReport{Goossens93f,
  author = "K. G. W. Goossens",
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  Number= "ECS-LFCS-93-269",
  Type= "LFCS Report Series",
  year= "1993",
  month = jun
}
```

27. **"The Formalisation of a Hardware Description Language in a Proof System: Motivation and Applications"** K. G. W. Goossens, September 1993.

[1993-semish.ps](#) [1993-semish.pdf](#)

```
@InProceedings{Goossens93e,
  author = "K. G. W. Goossens",
  title = "The Formalisation of a Hardware Description Language in a Proof System: {M}otivation and Applications",
  booktitle = "Proceedings of the {XIII} Conference of the Brazilian Computer Society",
  year = "1993",
  address = "Florianopolis, Brazil",
  month = sep
}
```

28. **"Structure and Behaviour in Hardware Verification"** K. G. W. Goossens, August 1993.

[1993-hol.ps](#) [1993-hol.pdf](#)

```
@InProceedings{Goossens93d,
  author = "K. G. W. Goossens",
  title = "Structure and Behaviour in Hardware Verification",
  booktitle = "Higher Order Logic Theorem Proving and Its Applications",
  year = "1993",
  editor = "Jeffrey J. Joyce and Carl-Johan H. Seger",
  publisher = "Springer Verlag",
  address = "Vancouver, Canada",
  month = aug,
  note = "Lecture Notes in Computer Science 780. A longer version is available as University of Edinburgh LFCS Report ECS-LFCS-93-273."
```

29. **"Embedding Hardware Description Languages in Proof Systems"** K. G. W. Goossens, PhD thesis, December 1992.

(NB: 301 pages 1.5 spaced 12pt due to thesis regulations. It may be printed 2 pages per A4 page with no loss of readability.)

[1992-thesis.ps](#) [1992-thesis.pdf](#) [abstract of thesis](#)

```
@PhdThesis{Goossens92g,
  author = "K. G. W. Goossens",
  title = "Embedding Hardware Description Languages in Proof Systems",
  school = "Laboratory for Foundations of Computer Science, Department of Computer Science, University of Edinburgh",
  year = "1992",
  month = dec
}
```

30. **"Operational Semantics Based Formal Symbolic Simulation"** K. G. W. Goossens, LFCS report 92-231, September 1992.

An extended version of 1992-hol.ps.

[1992-lfcsreport231.ps](#) [1992-lfcsreport231.pdf](#)

```
@TechReport{Goossens92e,
  author = "K. G. W. Goossens",
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  Institution= "LFCS, Department of Computer Science, University of Edinburgh",
  Number= "ECS-LFCS-92-231",
  Type= "LFCS Report Series",
  year= "1992",
}
```

month = sep,

-
31. **"Operational Semantics Based Formal Symbolic Simulation"** K. G. W. Goossens, HOL'92, September 1992.
[1992-hol.ps](#) [1992-hol.pdf](#)

```
@InProceedings{Goossens92c,  
  author = "K. G. W. Goossens",  
  title = "Operational Semantics Based Formal Symbolic Simulation",  
  booktitle = "Higher Order Logic Theorem Proving and Its Applications",  
  year = "1992",  
  editor = "Luc Claesen and Michael Gordon",  
  month = sep,  
  note = "A longer version is available as LFCS Report ECS-LFCS-92-231"
```

-
32. **"Integrating Hardware Description Languages and Proof Systems"** K. G. W. Goossens, IFIP'92, September 1992.
[1992-ifip.ps](#) [1992-ifip.pdf](#) [1992-ifip-poster.ps](#) [1992-ifip-poster.pdf](#)

```
@Misc{Goossens92d,  
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  title = "Integrating Hardware Description Languages and Proof Systems",  
  howpublished = "Poster",  
  year = "1992",  
  month = sep,  
  note = "Presented at {IFIP} '92 in Madrid, Spain"
```

-
33. **"Embedding a CHDDL in a Proof System"** K. G. W. Goossens, CHARME'91, June 1991.
[1991-charme.ps](#) [1991-charme.pdf](#)

```
@InProceedings{Goossens91b,  
  author = "K. G. W. Goossens",  
  title = "Embedding a {CHDDL} in a Proof System",  
  booktitle = "Advanced Research Workshop on Correct Hardware Design Methodologies",  
  year = "1991",  
  editor = "P. Prinetto and P. Camurati",  
  pages = "359-374",  
  organization = "ESPRIT CHARME",  
  publisher = "North Holland",  
  month = jun,  
  note = "Also as LFCS Report ECS-LFCS-91-155"
```

-
34. **"Embedding a CHDDL in a Proof System"** K. G. W. Goossens, LFCS report 91-155, May 1991.
LFCS report version of charme.ps.
[1991-lfcsreport155.ps](#) [1991-lfcsreport155.pdf](#)

```
@TechReport{Goossens91a,  
  Author= "K. G. W. Goossens",  
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  Number= "ECS-LFCS-91-155",  
  Type= "LFCS Report Series",  
  Month= may,  
  Year= 1991
```

-
35. **"Semantics for picoELLA"** K. G. W. Goossens, Unpublished, June 1990.
[1990-picoellasemantics.ps](#) [1990-picoellasemantics.pdf](#)

```
@Unpublished{Goossens90b,  
  Author= "K. G. W. Goossens",  
  Title= "Semantics for pico{ELLA}",  
  Month= jun,  
  Year= "1990",  
  Note= "Manuscript"
```

-
36. **"Thesis proposal"** K. G. W. Goossens, Unpublished, December 1989.
[1989-thesisproposal.ps](#) [1989-thesisproposal.pdf](#)

```
@Unpublished{Goossens89d,  
  Author= "K. G. W. Goossens",  
  Title= "Embedding Computer Hardware Design and Description Languages in Proof Systems",  
  Month= dec,  
  Year= "1989",  
  Note= "Thesis Proposal"
```



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