

# PUBLICATIONS

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## Books

4. Zima,H.P., Chapman,B.M.: **Supercompilers for Parallel and Vector Computers**  
ACM Press Frontier Series/Addison-Wesley (1990); Japanese Translation, Ohmsha (1995)  
Digital Reprint, Antony Rowe Ltd., Eastbourne (2002)
3. Zima,H.P.: **Compiler Construction II : Synthesis and Optimization** (in German)  
Reihe Informatik Band 37, Bibliographisches Institut, Mannheim (1983)
2. Zima,H.P.: **Compiler Construction I: Analysis** (in German)  
Reihe Informatik Band 36, Bibliographisches Institut, Mannheim  
First printing 1982, second printing 1989
1. Zima,H.P.: **Operating Systems: Parallel Processes** (in German)  
Reihe Informatik Band 20, Bibliographisches Institut, Mannheim  
First printing 1976, second printing 1980, third printing 1986

## Journal Publications

34. Zima,H.P.,James,M.L.,and Springer,P.L.: Fault-Tolerant On-Board Computing for Robotic Space Missions  
*Journal of Concurrency and Computation: Practice and Experience*, John Wiley and Sons, 2011
33. Kennedy,K., Koelbel,C., and Zima,H.P.: The Rise and Fall of High Performance Fortran  
*Communications of the ACM, Vol.54, No. 11, pp.74-82, 2011*
32. James,M., Shapiro, A.A., Springer,P.L., and Zima,H.P.: Adaptive Fault Tolerance for Scalable Cluster Computing in Space  
*International Journal of High Performance Computing Applications (IJHPCA)*, Vol.23,No.3,SAGE Publications, 2009
31. Chamberlain,B.L., Callahan,D., and Zima,H.P.: Parallel Programmability and the Chapel Language  
*International Journal of HPC Applications*, Special Issue on High Productivity Languages and Models, Vol.21,No.3, pp.291-312 (2007)
30. Zima, H.P.: From FORTRAN 77 to Locality-Aware High Productivity Languages for Peta-Scale Computing  
*Scientific Programming*, Vol. 15. Issue 1 (January 2007), pp.45-65, IOS Press, Amsterdam, The Netherlands, 2007
29. Diaconescu,R.E. and Zima,H.P.: An Approach to Data Distributions in Chapel  
In: *International Journal of HPC Applications*, Special Issue on High Productivity Languages and Models, Vol.21,No.3, pp.313-335 (2007)
28. Zima,H.P.: Data Distribution Specification for High Performance Computing  
Invited Paper, *Journal of Universal Computer Science (JUCS)*, Special Issue on Formal Aspects of Software Engineering – *J.UCS Special Issue in Honor of Professor Peter Lucas*, Vol.7, No. 8 (2001), pp.736-753.
27. Mehrotra,P. and Zima,H.P.: High Performance Fortran for Aerospace Applications.  
*Parallel Computing*, Special Issue on Parallel Computing in Aerospace, Vol.27,Number 4,pp.477-501, March 2001.
26. Benkner,S. and Zima,H.P: Compiling High Performance Fortran for Distributed-Memory Architectures  
In: Trystram,D.(Ed.): *Parallel Computing 25 (1999)*, Special Anniversary Issue, pp.1785-1825.
25. Laure,E.,Mehrotra,P., and Zima,H.P.: Opus: Heterogeneous Computing With Data Parallel Tasks  
*Parallel Processing Letters*, Vol.9,No.2,pp.275-289, June 1999
24. Laure,E.,Haines,M.,Mehrotra,P., and Zima,H.P.: On the Implementation of the Opus Coordination Language  
*Concurrency Practice and Experience* Vol.12,No.4,pp.227-249, April 2000.
23. Zima,H.P. and Di Martino,B.: New Trends in Programming and Execution Models for Parallel Architectures, Heterogeneously Distributed Systems and Mobile Computing.  
*Journal of Systems Architecture* 45, pp.1259-1261 (1999).
22. Di Martino,B. and Zima,H.P.: Support of Automatic Parallelization with Concept Comprehension  
*Journal of Systems Architecture (JSA)*, Vol.45 (1999), pp.427-439
21. Mehrotra,P.,Van Rosendale,J.,Zima,H.P: Language Support for Multidisciplinary Applications  
*IEEE Computational Science and Engineering* Vol.5,No.2,pp.64-75 (April-June 1998)

20. Mehrotra,P.,Van Rosendale,J.,Zima,H.P.: High Performance Fortran: History, Status and Future  
In: Zapata,E. and Padua,D.(Eds.): Parallel Computing, Special Issue on Languages and Compilers for Parallel Computers, Vol.24, No.3-4,pp.325–354 (1998)
19. Ujaldon,M., Zapata,E.L., Chapman,B.M., Zima,H.P.: Vienna Fortran/HPF Extensions for Sparse and Irregular Problems and Their Compilation  
IEEE Transactions on Parallel and Distributed Systems, Vol.8, No.10, pp.1068-1083 (October 1997)
18. Chapman,B.M.,Mehrotra,P.,Zima,H.P.: Vienna Fortran and the Path Towards a Standard Parallel Language  
Invited Paper, IEICE Trans.Information and Systems,Vol.E80-D,No.4, pp.409-416 (April 1997)
17. Chapman,B.M.,Zima,H.P.,Haines,M.,Mehrotra,P.,Van Rosendale,J.: OPUS: A Coordination Language for Multidisciplinary Applications  
Scientific Programming Vol.6/4 Winter 1997,pp.345-362
16. Zima,H.P., Brezany,P., Chapman,B.M.: SUPERB and Vienna Fortran  
Parallel Computing 20 (1994), pp.1487-1517.
15. Zima,H.P.: High Performance Languages for Parallel Computing  
IEEE Computational Science and Engineering,Vol.3,No.3,pp.63-65 (Fall 1996)
14. Chapman,B.M.,Mehrotra,P.,Zima,H.P.: Extending HPF for Advanced Data Parallel Applications  
IEEE Magazine on Parallel and Distributed Technology, Fall 1994, pp.59-70.  
Also: Technical Report TR 94-7, Institute for Software Technology and Parallel Systems, University of Vienna (May 1994)
13. Chapman,B.M.,Mehrotra,P.,Zima,H.P.: High Performance Fortran Without Templates: A New Model for Data Distribution and Alignment  
Proc. Fourth ACM SIGPLAN Symposium on Principles and Practice of Parallel Programming, San Diego (May 19-22, 1993), ACM SIGPLAN Notices Vol.28, No.7, pp.92-101 (July 1993)
12. High Performance Fortran Forum: High Performance Fortran Language Specification.  
*Scientific Programming* 2(1-2), pp.1-170 (1993)
11. Chapman,B.M.,Mehrotra,P.,Zima,H.P.: User Defined Mappings in Vienna Fortran  
Proc.Second Workshop on Languages, Compilers, and Run-Time Environments for Distributed-Memory Multiprocessors, Boulder, CO (September 30 - October 2, 1992) ACM SIGPLAN Notices Vol.28, No.1, pp.72-75 (January 1993)
10. Zima,H.P., Chapman,B.M.: Compiling for Distributed-Memory Systems  
Invited Paper, In: Proceedings of the IEEE, Special Section on Languages and Compilers for Parallel Machines, Vol.81, No.2, pp. 264-287, (February 1993)  
Also: Technical Report ACPC/TR 92-16, Austrian Center for Parallel Computation (November 1992)
9. Chapman,B.M., Mehrotra,P., Zima,H.P.: Programming in Vienna Fortran  
Scientific Programming Vol.1,No.1, pp.31-50  
(Fall 1992)
8. Gerndt,H.M., Thole,C.A., Trottenberg,U., Zima,H.P.: Parallelisierung auf SUPRENUM  
Informatik-Spektrum 13, 247-259 (1990)
7. Zima,H.P.: Das SUPRENUM-System: Architektur, Software und Anwendungen  
In: Kastens,U.,Rammig,F.J.(Eds.): Proc. GI/ITG-Fachtagung Architektur und Betrieb von Rechensystemen  
Informatik Fachberichte 168,1-20  
Springer Verlag, Berlin (1988)
6. Kremer,U., Bast,H.-J., Gerndt,M., Zima,H.P.: Advanced Tools and Techniques for Automatic Parallelization  
Parallel Computing 7, 387-393 (1988)
5. Zima,H.P., Bast,H.-J., Gerndt,M.: SUPERB - A Tool For Semi-Automatic MIMD/SIMD Parallelization  
Parallel Computing 6, 1-18 (1988)
4. Zima,H.P.: A Constraint Language and Its Interpreter  
Computer Languages 11, 2 (1986)
3. Zima,H.P.: Datenflußanalyse  
Informatik Spektrum 6, 155-164 (August 1983)
2. Zima,H.P.: PROGRESS- Eine Programmiersprache für Realzeitsysteme  
Angewandte Informatik 8/1974 (August 1974)
1. Mor,L., Yott,J., Zima,H.P.: PROGRESS- A Programming Language for Real-Time Systems  
ACM SIGPLAN Notices Vol.3, No.6, pp.4-24 (June 1972)

## Conference Publications and Chapters in Books

97. Zima,H.P. and Nikora,Allen: Fault Tolerance  
Invited Contribution, Encyclopedia of Parallel Computing (David Padua, Editor in Chief), 2011, ISBN 978-0-387-09765-7, Springer Verlag
96. James,M., Springer,P. and Zima,H.P.: Adaptive Fault Tolerance for Many-Core Based Space-Borne Computing  
Distinguished Paper, In: *P.D'Ambra,M.Guarracino, and D.Talia (Eds.): Proc.Sixteenth International European Conference on Parallel and Distributed Computing (Euro-Par 2010), Part II*, pp. 260-274, LNCS6272, Springer-Verlag, Heidelberg,2010

95. Zima,H.P.: High-Level Specification of Data Distribution for Many-Core Based Parallel Systems  
*Extended Abstract, Proc. 13th International Workshop on Innovative Architectures for Future Generation High-Performance Processors and Systems (IWIA'10)*, Kohala Coast, Hawaii, March 2010
94. Zima,H.P. and James,M.: Runtime Verification and Validation for Multi-Core Based On-Board Computing  
*Extended Abstract, Proc.Thirteenth Annual Workshop on High Performance Embedded Computing (HPEC 2009)*, MIT Lincoln Laboratory, Lexington, Massachusetts, September 2009
93. Zima,H.P.and James,Mark: Introspection-Based Verification and Validation  
*Proc.Third IEEE International Conference on Space Missions Challenges for Information Technology (SMC-IT 2009)*, Pasadena, July 2009
92. Zima,H.P.,Hall,M.,Chen,C.,and Chame,J.: Model-Guided Autotuning of High-Productivity Languages for Petascale Computing  
*Proc.2009 International Symposium on High Performance Distributed Computing (HPDC 2009)*, Munich, Germany, June 2009
91. James,M., Shapiro, A.A., Springer,P., and Zima,H.P.: Adaptive Fault Tolerance for Space-Borne Computing  
*Extended Abstract, Proc. 12th International Workshop on Innovative Architectures for Future Generation High-Performance Processors and Systems (IWIA'09)*, Maui, Hawaii, March 2009
90. James,M., Shapiro, A., Springer,P., and Zima,H.P.: Introspection-Based Fault Tolerance for COTS-Based High Capability Computation in Space  
In: *Alexander V.Veidenbaum and Atsushi Kubota(Editors): Proc.11th International Workshop on Innovative Architectures for Future Generation High-Performance Processors and Systems (IWIA 2008)*,pp.74-83, IEEE Computer Society, 2009
89. James,M. and Zima,H.P.: Introspection-Based Fault Tolerance for Future On-Board Computing Systems  
*Extended Abstract, Proc.Twelfth Annual Workshop on High Performance Embedded Computing (HPEC 2008)*, MIT Lincoln Laboratory, Lexington, Massachusetts, September 2008
88. James,M. and Zima,H.P.: An Introspection Framework for Fault Tolerance in Support of Autonomous Space Systems  
*Proc.2008 IEEE Aerospace Conference*, Big Sky, Montana, March 2008
87. James,M. and Zima,H.P.: Fault Tolerance for High-Capability Computation in Space Based on Multi-Core Technology – An Introspection-Based Approach  
Extended Abstract, *Proc.11th International Workshop on Innovative Architectures for Future Generation High-Performance Processors and Systems (IWIA'08)*, Hilo, Hawaii, January 2008
86. Diaconescu,R.E. and Zima,H.P.: Locality Awareness in a High-Productivity Language  
In: *David Bader (Editor): Petascale Computing: Algorithms and Applications, Computational Science Series*, Chapter 22, pp.463-485, Chapman and Hall/CRC Press (2008)
85. Kennedy,K., Koelbel,C., and Zima,H.P.: The Rise and Fall of High Performance Fortran: An Historical Object Lesson  
In: *Barbara Ryder and Brent Hailpern (Editors): HOPL III: Proceedings of the Third ACM SIGPLAN Conference on History of Programming Languages Conference (HOPL-III)*, San Diego, California, June 9-10, 2007; ACM, New York, NY
84. Diaconescu,R.E. and Zima,H.P.: User-Defined Data Distributions in High-Level Programming Languages  
*Proc. Second IEEE International Conference on Space Mission Challenges for Information Technology (SMC-IT 2006)*, Pasadena, July 2006
83. Diaconescu,R.E.,Chamberlain,B.,James,M.L.,Zima,H.P.: Reusable and Extensible High-Level Data Distributions  
*Proc. Workshop on Patterns in High Performance Computing <http://charm.cs.uiuc.edu/patHPC/>*, University of Illinois at Urbana-Champaign, Illinois, May 4-6, 2005.
82. Zima,H.P.: Programming Models and Languages for High Productivity Computing Systems  
In: *Zwiefhofer,W. and Mozdzynski,G.(Eds.): Use of High Performance Computing in Meteorology, Proc.Eleventh ECMWF Workshop on Use of High Performance Computing in Meteorology*, pp.25-35, World Scientific Publishers, Singapore, 2005.
81. Zima,H.P.: Introspection in a Massively Parallel PIM-Based Architecture.  
In: *Joubert,G.R.,Nagel,W.E.,Peters,F.J., and Walter,W.V.(Editors): Parallel Computing: Software Technology, Algorithms, Architectures and Applications, Advances in Parallel Computing Volume 13*, 2004,pp.441-448.
80. Callahan,D.,Chamberlain,B.L., and Zima,H.P.: The Cascade High Productivity Language.  
*Proc.9th International Workshop on High-Level Parallel Programming Models and Supportive Environments (HIPS 2004)*, Santa Fe, New Mexico, April 2004.
79. Zima,H.P.: Issues in Software Support for Future High End Computing Systems.  
*Proc. Workshop on the Road Map for the Revitalization of High End Computing*, Washington, DC, June 2003.
78. Sterling,T.L. and Zima,H.P.: Gilgamesh: A Multithreaded Processor-In-Memory Architecture for Petaflops Computing  
*Proc. SC2002 – High Performance Networking and Computing*, November 2002, Baltimore.
77. Zima,H.P.: Towards High-Level Programming Support for Scientific Computing on Clusters  
Invited Paper, (Extended Abstract), In: *Proc.IEEE Cluster2001 Conference*, Newport Beach, California, USA, October 2001.
76. Sterling,T.L., Zima,H.P.,and Bergman,L.A.: Gilgamesh: A Scalable Spaceborne Computer Architecture Using Processor-in-Memory (PIM) Technology.  
*Proc.American Institute for Aeronautics and Astronautics (AIAA) Conference 2001*, August 2001, Albuquerque, New Mexico.

75. Zima, H.P., and Sterling, T.L.: The Gilgamesh Processor-in-Memory Architecture and Its Execution Model  
*Proc. 9<sup>th</sup> Workshop on Compilers for Parallel Computers (CPC 2001)*, Edinburgh, Scotland (June 2001)
74. Zima, H.P.: High-Level Programming Support for HPC – The Tradeoff Between Elegance and Performance  
Invited Paper, In: *Proc. International Supercomputer Conference (SC 2001)*, Heidelberg, Germany (June 2001)
73. Zima, H.P. and Sterling, T.L.: Macroservers: An Object-Based Programming and Execution Model for Processor-in-Memory Arrays  
Invited Paper, In: (Valero, M., Kazuki, J., Kitsuregawa, M., and Tanaka, H. (Editors): *Proc. Third International Symposium on High Performance Computing (ISHPC2K)*, Tokyo, Japan, October 2000. Lecture Notes in Computer Science 1940, pp.7-25, Springer Verlag.
72. Zima, H.P. and Sterling, T.L.: Support for Irregular Computations in Massively Parallel PIM Arrays, Using an Object-Based Execution Model. *Proc. Irregular'2000*, Cancun, Mexico, May 2000.
71. Zima, H.P. and Sterling, T.L.: A Programming and Execution Model for DRAM Processor-In-Memory Arrays.  
*Proc. First International AURORA Conference (IAC 2000)*, Vienna, Austria, January 2000.
70. Laure, E., Haines, M., Mehrotra, P., and Zima, H.P.: Compiling Data Parallel Tasks for Coordinated Execution  
In: Amestoy, P. et al. (Eds.): *EuroPar'99 Parallel Processing*, Lecture Notes in Computer Science No.1685, pp.413-417, Springer Verlag, 1999.
69. Benkner, S., Lonsdale, G., and Zima, H.P.: The HPF+ Project: Supporting HPF for Advanced Industrial Applications.  
*Proc. EuroPar'99 Parallel Processing*, Toulouse, France, August/September 1999. Lecture Notes in Computer Science (LNCS) Vol.1685, Springer Verlag, 1999.
68. Chapman, B., Mehrotra, P., and Zima, H.P.: Enhancing OpenMP with Features for Locality Control.  
In: Zwiefelhofer, W. and Kreitz, N. (Eds.): *Proc. Eighth ECMWF Workshop on the Use of Parallel Processors in Meteorology "Towards Teracomputing"*, pp.301-313, Reading, England (November 1998). World Scientific, 1999.
67. Zima, H.P.: An Introduction to HPF+ Project  
Invited Paper, Lecture Notes in Computer Science (LNCS 1615/1999), pp.9-10, Springer Verlag, Berlin/Heidelberg (1999)
66. Laure, E., Mehrotra, P., and Zima, H.P.: Opus: Heterogeneous Computing With Data Parallel Tasks.  
*Proc. Workshop on Programming Environments, Clusters, and Computational Grids for Scientific Computing*. Blackberry Farm, Tennessee (September 1998).
65. Mehrotra, P., Van Rosendale, J., Zima, H.P.: High Performance Fortran: Status and Prospects  
*Proc. Fourth International Workshop on Applied Parallel Computing (PARA'98)*, Umea, Sweden (June 14-17, 1998)
64. Delves, M. and Zima, H.P.: High Performance Fortran: A Status Report, or: Are we Ready to Give up MPI?  
Lecture Notes in Computer Science 1497, pp.161-171 (1998)
63. Benkner, S., Mehrotra, P., Van Rosendale, J., Zima, H.P.: Explicit Management of Communication Schedules in HPF+.  
In: Hoffmann, G. and Kreitz, N. (Eds.): *Proc. ECMWF Workshop "Making its Mark"* (November 1997), World Scientific Publishing.
62. Mehrotra, P., Van Rosendale, J., Zima, H.P.: Solving Irregular Problems With High Performance Fortran  
*Proc. Third Working Conference on Massively Parallel Programming Models (MPPM-97)*, London, England, pp.2-11 (November 12-14, 1997)
61. Benkner, S., Mehrotra, P., Van Rosendale, J., Zima, H.: High-Level Management of Communication Schedules in HPF-like Languages  
*Proc. International Conference on Supercomputing 1998 (ICS'98)*, Melbourne (July 1998). Also: Technical Report TR 97-5, Institute for Software Technology and Parallel Systems, University of Vienna (April 1997)
60. Di Martino, B., Iannello, G., Zima, H.P.: An Automated Algorithmic Recognition Technique to Support Parallel Software  
*Proc. 2nd International Workshop on Software Engineering for Parallel and Distributed Systems*, Boston, Massachusetts (May 17-18, 1997)
59. Chapman, B.M., Mehrotra, P., Zima, H.P.: HPF+: New Language and Implementation Mechanisms for the Support of Advanced Irregular Applications  
*Proc. Sixth Workshop on Compilers for Parallel Computers (CPC'96)*, Aachen, Germany (December 12, 1996)
58. Benkner, S., Mehrotra, P., Van Rosendale, J., Zima, H.P.: Current State and Future Developments of HPF-Like Languages  
*Proc. Seventh ECMWF Workshop on Parallel Computers in Meteorology*, Reading, England (December 1996)
57. Mehrotra, P., and Zima, H.P.: Extending High Performance Fortran for Advanced Applications  
*Proc. Sommerschule Partielle Differentialgleichungen, Numerik und Anwendungen*, KFA Jülich (September 1996)
56. Chapman, B.M., Mehrotra, P., Zima, H.P.: High Performance Applications: State-of-the-Art and Future Requirements  
1996 Spring Proceedings, Cray User Group, pp.6-13 (March 1996)
55. Andel, S., Di Martino, B., Hulman, I., Zima, H.P.: Program Comprehension Support for Knowledge Based Parallelization  
*Proc. 4<sup>th</sup> EUROMICRO Workshop on Parallel and Distributed Processing*, Braga, Portugal (January 1996)
54. Chapman, B.M., Mehrotra, P., Zima, H.P.: Vienna Fortran and the Path Towards a Standard Parallel Language  
Invited Paper, In: M. Shimasaki, H. Sato (Eds.): *Proc. International Symposium on Parallel and Distributed Supercomputing*, Fukuoka, Japan (September 26-28, 1995), pp.224-232.
53. Zima, H.P., Chapman, B.M.: Automatische Parallelisierung sequentieller Programme  
In: Waldschmidt, K. (Ed.): *Parallelrechner – Architekturen, Systeme, Werkzeuge*  
Chapter 14, pp.563–587. Teubner, Stuttgart (1995)
52. Di Martino, B., Chapman, B.M., Iannello, G., Zima, H.P.: Integration of Program Comprehension Techniques into the Vienna Fortran Compilation System  
*Proc. 1995 International Conference on High Performance Computing*, New Delhi, India (Dec.27-30, 1995)

51. Ujaldon,M.,Zapata,E.L.,Chapman,B.M., Zima,H.P.: Data Parallel Language Features for Sparse Codes  
In: Szymanski,B.K.,Sinharoy,B.(Eds.): Languages, Compilers and Run-Time Systems for Scalable Computers. Chapter 19, pp.253–264.  
Kluwer Academic Publishers, Boston (1995)
50. Ujaldon,M.,Zapata,E.L.,Chapman,B.M., Zima,H.P.: New Data Parallel Language Features for Sparse Matrix Computations  
Proc.9th International Parallel Processing Symposium (IPPS'95), Santa Barbara, California (April 1995)
49. Chapman,B.M.,Pantano,M.,Zima,H.P.: Supercompilers for Massively Parallel Architectures  
Proc. Aizu International Symposium on Parallel Algorithms/Architecture Synthesis (pAs'95), Aizu-Wakamatsu, Fukushima, Japan (March 15–17, 1995),pp.315-322
48. Pantano,M. and Zima,H.P.: An Integrated Environment for the Support of Automatic Compilation  
In: Dongarra,J.J.,Grandinetti,L.,Joubert,G.R.,Kowalik,J.(Eds.): High Performance Computing: Technology, Methods, and Applications, pp.159-176.  
Elsevier, 1995.
47. Chapman,B.M.,Mehrotra,P.,Van Rosendale,J.,Zima,H.P.: Extending Vienna Fortran With Task Parallelism  
Proc. 1994 International Conference on Parallel and Distributed Systems (ICPADS'94)  
Hsinchu, Taiwan,ROC (December 19-21, 1994)
46. Chapman,B.M.,Mehrotra,P.,Zima,H.P.: Compiler Technology for Massively Parallel Architectures – State of the Art and Current Research  
Proc. Sixth ECMWF Workshop on Use of Parallel Processors in Meteorology, Reading, England (November 21-25, 1994)
45. Chapman,B.M.,Mehrotra,P.,Zima,H.P.: Why High Performance Fortran is not Useful for Advanced Numerical Applications – Directions for Future Developments  
Invited Paper, In: Furnari,M.M.(Ed.): Proc.Second International Workshop on Massive Parallelism: Hardware, Software and Applications, Capri, Italy (October 3-7, 1994),pp.321-336.
44. Pantano,M.,Zima,H.P.:Performance Analysis of Parallelized Programs Using Workload Characterization Techniques  
Proc.AICA'94 Annual Conference, Palermo, Italy (September 1994), pp.1851–1865
43. Chapman,B.M.,Mehrotra,P.,Zima,H.P.: High Performance Fortran: Current Status and Future Directions  
Invited Paper, In: Proc.International Advanced Workshop on High Performance Computing. Technology and Applications.  
Cetraro, Italy (June 27-29, 1994)
42. Benkner,S.,Brezany,P.,Zima,H.P.: Processing Array Statements and Procedure Interfaces in the PREPARE High Performance Fortran Compiler  
In: Fritzson,P.A.(Ed.): Proc.5th Int.Conf.on Compiler Construction (CC'94), Edinburgh, U.K.,(April 1994)  
Lecture Notes in Computer Science 786, pp.324-338, Springer Verlag, Berlin (1994)
41. Chapman,B.M.,Mehrotra,P.,Zima,H.P.: High Performance Fortran Languages: Advanced Applications and Their Implementation  
Future Generation Computer Systems 11(1995), pp.401-407  
Also in: Gentzsch,W. and Harms,U.(Eds.): Proc.High Performance Computing and Networking Europe (HPCNE Europe 1994), Volume II  
Lecture Notes in Computer Science 797, pp.407-416, Springer Verlag, Berlin (1994)
40. Haines,M.,Hess,B.,Mehrotra,P.,Van Rosendale,J.,Zima,H.P.: Runtime Support for Data Parallel Tasks  
Proc.Fifth Symposium on the Frontiers of Massively Parallel Computation (Frontiers'95),McLean,Virginia  
Also: Technical Report TR 94-2, Institute for Software Technology and Parallel Systems, University of Vienna (April 1994) and ICASE Technical Report 94-26
39. Chapman,B.M., Mehrotra,P., Van Rosendale,J., and Zima.H.P.: A Software Architecture for Multidisciplinary Applications: Integrating Task and Data Parallelism  
Proc.CONPAR'94 – VAPP VI, pp.664-676, Linz, Austria (September 1994)  
Also: Technical Report TR 94-1, Institute for Software Technology and Parallel Systems, University of Vienna, March 1994.
38. Benkner,S.,Brezany,P.,Zima,H.P.: Compiling High Performance Fortran in the PREPARE Environment  
Proc. Fourth Workshop on Compilers for Parallel Computers, Delft, Netherlands (Dec.13-16,1993), pp.105-116.
37. Hulman,J.,Andel,S.,Chapman,B.M.,Zima,H.P.: Intelligent Parallelization Within the Vienna Fortran Compilation System  
Proc.Fourth Workshop on Compilers for Parallel Computers, Delft, Netherlands, December 13-16, 1993, pp.455-467.
36. Chapman,B.M.,Mehrotra,P.,Moritsch,H.,Zima,H.P.: Dynamic Data Distributions in Vienna Fortran  
Proc.Supercomputing'93, pp.284-293, Portland,Oregon (November 15-19,1993)
35. Benkner,S., Zima,H.P.: Massively Parallel Architectures and Their Programming Paradigms – Recent Developments  
Invited Paper, In: Proc. AICA'93, International Section: Parallel and Distributed Architectures and Algorithms, pp. 31-56  
Gallipoli, Italy (September 22-24, 1993)
34. Zima,H.P.,Brezany,P.,Chapman,B.M.,Hulman,J.: Automatic Parallelization for Distributed-Memory Systems: Experiences and Current Research  
Invited Paper, In: Spies,P.P.(Ed.): Euro-Arch '93, pp.538-556  
Proc. European Informatics Congress, Computing Systems Architectures, Munich, October 18-19, 1993  
Informatik aktuell, Springer Verlag (1993)

33. Chapman,B.M.,Fahringer,T.,Zima,H.P.: Automatic Support for Data Distribution on Distributed-Memory Multiprocessor Systems  
Invited Paper, In: Proc.Sixth Workshop on Languages and Compilers for Parallelism, Portland, August 1993
32. Chapman,B.M.,Mehrotra,P.,Zima,H.P.: User Defined Mappings in Vienna Fortran  
Proc.Second Workshop on Languages, Compilers, and Run-Time Environments for Distributed-Memory Multiprocessors, Boulder, CO (September 30 - October 2, 1992) ACM SIGPLAN Notices Vol.28, No.1, pp.72-75 (January 1993)
31. Fahringer,T.,Zima,H.P.: A Static Parameter Based Performance Prediction Tool for Parallel Programs  
Invited Paper, In: International Conference on Supercomputing 1993 (ICS'93), Tokyo  
Also: Technical Report ACPC/TR 93-1, Austrian Center for Parallel Computation (January 1993)
30. Brezany,P.,Gerndt,M.,Mehrotra,P.,Zima,H.P.: Concurrent File Operations in a High-Performance Fortran  
Proc. Supercomputing'92, Minneapolis, IEEE Computer Society Press, pp.230-237 (November 1992)
29. Chapman,B.M.,Moritsch,H.,Zima,H.P.: Vienna Fortran – A Data Parallel Programming Language  
Proc.1992 European Meeting of the Intel Supercomputer Users Group, Lyon (August 1992)
28. Chapman,B.M.,Mehrotra,P.,Zima,H.P.: Handling Distributed Data in Vienna Fortran Procedures  
In: Banerjee,U.,Gelernter,D.,Nicolau,A.,Padua,D.(Eds.): Proc.5th Int.Workshop on Languages and Compilers for Parallel Computing (New Haven, Connecticut, USA, August 3-5,1992)  
Lecture Notes in Computer Science 757,pp.248-263, Springer Verlag (1993)
27. Fahringer,T., Blasko,R., Zima,H.P.: Automatic Performance Prediction to Support Parallelization of Fortran Programs for Massively Parallel Systems  
Proc.1992 International Conference on Supercomputing (ICS'92), pp.347-356, Washington, D.C. (July 1992)
26. Brezany,P., Gerndt,M.,Sipkova,V.,Zima,H.P.: SUPERB Support for Irregular Scientific Computations  
Proc. of the Scalable High Performance Computing Conference, pp.314-321, Williamsburg, Virginia (April 1992)
25. Benkner,S., Chapman,B.M., Zima,H.P.: Vienna Fortran 90  
Proc. of the Scalable High Performance Computing Conference,pp.51-59, Williamsburg, Virginia (April 1992)
24. Gerndt,H.M., Zima,H.P.: SUPERB - Experiences and Future Research  
In: Saltz,J. and Mehrotra,P.(Eds.): Languages, Compilers and Runtime Environments for Distributed Memory Machines, pp.1-15  
Advances in Parallel Computing 3, North Holland, Amsterdam (1992)
23. Zima,H.P., Chapman,B.M.: Software Tools for Parallel Program Development  
Invited Paper, In: (Gaffney,P.W.,Houstis,E.N.(Eds.): Proc. IFIP TC2/ WG 2.5 Working Conference on Programming Environments for High-Level Scientific Problem Solving, 157-177 (Karlsruhe, 23-27 September 1991)  
IFIP Transactions A-2, North Holland (1992)
22. Zima,H.P.: Automatic Vectorization and Parallelization for Supercomputers  
In: Perrott,R.H.(Ed.): Software for Parallel Computers, Chapter 8, pp.107-120  
Chapman and Hall (1991)
21. Chapman,B.M., Mehrotra,P., Zima,H.P.: Vienna Fortran - A Fortran Language Extension for Distributed-Memory Multiprocessors  
In: Saltz,J. and Mehrotra,P.(Eds.): Languages, Compilers and Runtime Environments for Distributed Memory Machines, pp.39-62, Advances in Parallel Computing 3, North Holland (1992)  
Also published as: NASA Contract Report 187634, ICASE Report No.91-72, NASA Langley Research Center, Hampton, Virginia (September 1991)
20. Zima,H.P.,Chapman,B.M.: Automatic Restructuring for Parallel and Vector Computers  
In Adeli,H.(Ed.): Supercomputing in Engineering Analysis, Chapter 5, 135-167  
Marcel Dekker, Inc., New York and Basel (1991)
19. Chapman,B.M., Herbeck,H.,Zima,H.P.: Automatic Support for Data Distribution  
Proc.Sixth Distributed Memory Conference (DMCC 6), Portland,OR, 51-58 (April 1991)
18. Wirtz,G.,Zima,H.P.: Spezifikation numerischer Software für Superrechner  
In: Reuter,A.(Ed.): Informatik Fachbericht 257, Band I, 554-568  
Proceedings GI-20.Jahrestagung (October 1990)
17. Zima,H.P.: Programmierparadigmen für parallele Systeme  
Proc. Workshop Partielle Differentialgleichungen: Algorithmen, Software und Anwendungen (Zurich, March 1990)
16. Gerndt,H.M., Zima,H.P.: Optimizing Communication in SUPERB Proc.CONPAR 90-VAPP IV (Zurich, September 1990)  
Lecture Notes in Computer Science LNCS 457, 300-311
15. Kennedy,K.,Zima,H.P.: Virtual Shared Memory for Distributed- Memory Machines  
Proc.Fourth Conference on Hypercubes, Concurrent Computers, and Applications, 361-366 (Monterey, CA, March 6-8, 1989)
14. Zima, H.: Automatic MIMD Parallelization  
In: Wright,M.H.(Ed.): Aspects of Computation on Asynchronous Parallel Processors,181-191  
Elsevier Science Publishers, Amsterdam (1989)
13. Zima,H.P.: An Advanced Programming Environment for a Supercomputer  
In: Dongarra,J.,Duff,I.,Gaffney,P.,McKee,S.(Eds.): Vector and Parallel Computing, Chapter 33, 395-404  
Ellis Horwood Series in Computers and Their Applications (1989)

12. Gerndt,M., Zima,H.P.: MIMD-Parallelization for SUPRENUM  
In: International Conference on Supercomputing, Athens  
Lecture Notes in Computer Science, Springer Verlag, Berlin (1988)
11. Zima,H.P., Bast,H.-J., Gerndt,M., Hoppen,J.: Semiautomatic Parallelization of Fortran Programs  
In: CONPAR 86 - Conference on Algorithms and Hardware for Parallel Processing  
Lecture Notes in Computer Science 237, pp.287-294 Springer Verlag, Berlin (1986)
10. Zima,H.P.: Interaktive Vektorisierung sequentieller Fortran-Programme  
In: Ecker,K.(Ed.): Proc. Workshop über Parallelverarbeitung Informatik-Bericht 86/1, Technical University Clausthal  
(July 1986)
9. Zima,H.P.: Silicon Valley  
In: Maurer,H.A.(Ed.):Jahrbuch Überblicke Informationsverarbeitung 1984, 351-369  
Bibliographisches Institut (1984)
8. Zima,H.P.: Automatische Generierung von Compilern  
In: Maurer,H.A.(Ed.):Jahrbuch Überblicke Informationsverarbeitung 1983, 277-314  
Bibliographisches Institut (1983)
7. Barz,H.-W., Zima,H.P.: A Bibliography of Parallel Processing  
Bulletin of the European Association of Theoretical Computer Science (1979)
6. Zima,H.P.: Mächtigkeit von Synchronisationsoperatoren  
Schriftenreihe der Österr. Computergesellschaft Nr. 5, 93-108 (1979)
5. Zima,H.P.: An Evaluation of the Real-Time Language PROGRESS  
Proc. EUROCONTROL Seminar on Real-Time Languages, Paris (1977)
4. Zima,H.P.: Real-Time Languages for Large-Scale Systems  
Proc. AFCET Conference "Langages Evolues Temps Reel", Paris (November 1975)
3. Zima,H.P.: Coordination of Asynchronous Tasks  
Proc. IFAC/IFIP Workshop on Real-Time Programming, Budapest (1974)
2. Zima,H.P.: Storage Allocation in Real-Time Programming Languages  
Proc. Third European Seminar on Real-Time Programming, Ispra (1973)
1. Zima,H.P.: A Programming Language for Real-Time Systems  
In: Pyle,I.C.(Ed.): Techniques in Real Time Programming, The Clarendon Press (1972)

## Editing

8. Li,Kuang-Ching, Hsu,Ching-Hsien, Yang,Laurence Tianruo, Dongarra,Jack, and Zima,H.P.(Editors): Handbook of Research on Scalable Computing Technologies  
Information Science Reference (IGI Global), Hershey, PA, USA (2009)
7. Kepner,J. and Zima,H.P. (Editors): Special Issue on High Productivity Languages and Models  
International Journal of HPC Applications, Vol.21,No.3, pp.249-250 (2007)
6. Di Martino,B.,Dongarra,J.,Hoisie,A.,Yang,L.T., and Zima,H.P.(Editors): Engineering the Grid: Status and Perspective.  
American Scientific Publishers,2006
5. Shimasaki,M. and Zima,H.P. (Editors): Special Issue on the Earth Simulator  
Parallel Computing, November 2004
4. Zima,H.P.(Editor): Report, DARPA Workshop on High Productivity Programming Languages and Models  
Santa Monica, CA, September 2004
3. Zima,H.P.,Joe,K.,Sato,M. and Shimasaki,M. (Editors): Proc. 4th International Symposium on High Performance Computing (ISHPC2002)  
Kansai Science City, Japan (15-17 May 2002), Lecture Notes in Computer Science LNCS 2327, Springer Verlag, 2002
2. Zima,H.P. (Editor): Proc. Third Workshop on Compilers for Parallel Computers, Vienna, July 6-9, 1992
1. Zima,H.P.( Editor): Parallel Computation: Proceedings of the 1st ACPC Conference, Springer Verlag, 1991