## Subject index for papers in Volume 35

Each index entry below is accompanied by an author's name and a page number; the author index contains the title of the paper and the names of coauthors, if any. Communications are identified by (C).

a page number; the author index contains the title of the paper and the names of coauthors, if any. Communications are identified by (C).			Enterprise System/9000 Type 9121 Vector Facility IBM Enterprise System/9000 Type 9121 system controller and memory subsystem design The IBM Enterprise System/9000	Slegel	367 357
Subject	Author	Page	Type 9121 air-cooled processor	Hajek	307
APL			p. co. co. co.	<b>,</b>	
Execution of automatically parallelized APL programs on RP3	Ching	767	Computer organization and design Clustering IBM Enterprise		
Artificial intelligence Visualizing processes in neural networks	Wejchert	244	System/3090 computers for parallel execution of FORTRAN programs Design choices for the TOP-1	Scarborough	667
networks	wejchert	244	multiprocessor workstation	Shimizu	591
Built-in self-test (BIST) Enhanced self-test techniques for			Hierarchically interconnected multiprocessors Operating system support for parallel	Franaszek	603
VLSI systems applied to the IBM Enterprise System/9000 Type 9121			programming on RP3	Bryant	617
processor	Sarma	390	The IBM Enterprise System/9000 Type 9121 air-cooled processor The IBM Victor V256 partitionable	Hajek	307
C programming language The parallel C (pC) programming language	Canetti	727	multiprocessor The Parallel Processing Compute	Shea	573
			Server The RP3 program visualization	Ammann	653
Caches Design choices for the TOP-1			environment	Kimelman	635
multiprocessor workstation Operating system support for parallel	Shimizu	591	Two approaches to array fault tolerance in the IBM Enterprise		
programming on RP3	Bryant	617	System/9000 Type 9121 processor	Turgeon	382
Communications  Monitoring the performance of			Computer performance analysis	8	
commercial T1-rate transmission service	Irvin	805	A trace-driven study of CMS file references	Bozman	815
			Design and performance of the IBM		
Compilers Automatic partitioning of a program dependence graph into parallel			Enterprise System/9000 Type 9121 Vector Facility Enhanced self-test techniques for	Slegel	367
tasks	Sarkar	779	VLSI systems applied to the IBM		
Execution of automatically parallelized APL programs on RP3	Ching	767	Enterprise System/9000 Type 9121 processor	Sarma	390
The parallel C (pC) programming language	Canetti	727	Visualizing parallel execution of FORTRAN programs	Szelényi	270

Computer architecture

Design and performance of the IBM

Computer-system availability Two approaches to array fault tolerance in the IBM Enterprise	T.	202	Graphic workstations and supercomputers: An integrated environment for simulation of fluid	Piccolo	167
System/9000 Type 9121 processor	Turgeon	382	dynamics problems	Piccolo	107
Data transmission			FORTRAN		
Monitoring the performance of			Clustering IBM Enterprise System/3090 computers for parallel		
commercial T1-rate transmission service	Irvin	805	execution of FORTRAN programs	Scarborough	667
			The Parallel Processing Compute Server	Ammann	653
Design for testability			561.761	-	
Enhanced self-test techniques for VLSI systems applied to the IBM			Fractals The out of fractal landageness	Musarava	535
Enterprise System/9000 Type 9121	C.	200	The art of fractal landscapes	Musgrave	333
processor	Sarma	390	Graphics		
Display technology			Picturing randomness on a graphics supercomputer	Pickover	227
Data visualization using a general-	ъ.	45	The art of fractal landscapes	Musgrave	535
purpose renderer Displaying morphological and	Doi	45	The RP3 program visualization environment	Kimelman	635
lithological maps: A numerically			CHVITOMILENC		000
intensive computing and visualization application	Barberi	78	Image processing		
IDB: An image database system	Turtur	88	A numerically intensive computing environment: IBM 3090 and the		
Interactive analysis of the topology of 4D vector fields	Dickinson	59	PS/2 Model 80	Arnold	140
Picture processing and three-	Dickinson	37	An interactive graphic tool to plot the structure of large sparse		
dimensional visualization of data from scanning tunneling and			matrices	Paolini	231
atomic force microscopy	Stoll	67	Animation of computer simulations of two-dimensional turbulence and		
Volume visualization of 3D finite	Variameda	12	three-dimensional flows	Briscolini	119
element method results	Koyamada	12	Application of visualization tools in solid mechanics	Moini	156
Electroerosion printing			Correlative visualization techniques		
Making negatives and plates for			for multidimensional data  Data visualization using a general-	Treinish	184
printing by electroerosion: Introduction and overview	Pennington	458	purpose renderer	Doi	45
Making negatives and plates for	S		Displaying morphological and lithological maps: A numerically		
printing by electroerosion: I.  Physical principles	Cohen	466	intensive computing and		
Making negatives and plates for			visualization application FEMvis: An interactive visualization	Barberi	78
printing by electroerosion: II.  Larger-scale fabrication and testing	Cohen	489	tool for mechanical analysis	Bala	4
Making negatives and plates for			Graphic workstations and		
printing by electroerosion: III. Use of the direct negative and direct			supercomputers: An integrated environment for simulation of fluid		
plate	Cohen	512	dynamics problems	Piccolo	167
			IDB: An image database system Interactive analysis of the topology	Turtur	88
Fault tolerance Two approaches to array fault			of 4D vector fields	Dickinson	59
tolerance in the IBM Enterprise			Interactive Quantitative Visualization Picture processing and three-	Peskin	205
System/9000 Type 9121 processor	Turgeon	382	dimensional visualization of data		
Field-effect transistors			from scanning tunneling and atomic force microscopy	Stoll	67
Visual interpretation of			Picturing randomness on a graphics		
multidimensional computations and transistor design	Farrell	26	supercomputer The art of fractal landscapes	Pickover Musgrave	227 535
transistor design	ranen	20	Three-dimensional visualization of	· ·	
Finite element analysis			many-body system dynamics Visual interpretation of	Bernaschi	254
FEMvis: An interactive visualization tool for mechanical analysis	Bala	4	multidimensional computations and		
Volume visualization of 3D finite	Dala	4	transistor design Visualization in a VLSI design	Farrell	26
element method results	Koyamada	12	automation system	DeMaris	238
Eluid dimamica			Visualization of molecular dynamics		
Fluid dynamics Animation of computer simulations			via ray-tracing and animation in a vectorized environment	Williams	108
of two-dimensional turbulence and	Dalamettut	110	Visualizing parallel execution of	Szalányi	270
three-dimensional flows	Briscolini	119	FORTRAN programs	Szelényi	210

859

Visualizing processes in neural networks	Wejchert	244	An interactive graphic tool to plot the structure of large sparse		
Visualizing structure in high- dimensional multivariate data	·		matrices	Paolini	231
Volume visualization of 3D finite	Young	97	Animation of computer simulations of two-dimensional turbulence and		
element method results	Koyamada	12	three-dimensional flows Application of visualization tools in	Briscolini	119
Imaging			solid mechanics Correlative visualization techniques	Moini	156
A 3072 × 32-stage TDI imaging device	Schlig	283	for multidimensional data  Data visualization using a general-	Treinish	184
Integrated circuit design			purpose renderer	Doi	45
A 128Kb CMOS static random-	CI.	221	Displaying morphological and lithological maps: A numerically		
access memory Visualization in a VLSI design	Chu	321	intensive computing and visualization application	Barberi	78
automation system Waveform-relaxation-based circuit	DeMaris	238	FEMvis: An interactive visualization tool for mechanical analysis	Bala	4
simulation on the Victor V256 parallel processor	Johnson	707	Further results using the overhead		
•			model for parallel systems Graphic workstations and	Flatt	721
Logic An adder design optimized for DCS			supercomputers: An integrated environment for simulation of fluid		
logic Differential current switch—High	Weinberger	352	dynamics problems Hierarchically interconnected	Piccolo	167
performance at low power	Eichelberger	313	multiprocessors IDB: An image database system	Franaszek Turtur	603 88
Manufacturing			Interactive analysis of the topology		
A 128Kb CMOS static random- access memory	Chu	321	of 4D vector fields Interactive Quantitative Visualization	Dickinson Peskin	59 205
•			Picture processing and three- dimensional visualization of data		
Mathematical functions and techniques Interactive analysis of the topology			from scanning tunneling and atomic force microscopy	Stoll	. 67
of 4D vector fields  Multiplication of a symmetric banded	Dickinson	59	Picturing randomness on a graphics		
matrix by a vector on a vector multiprocessor computer	Reuter	697	supercomputer The art of fractal landscapes	Pickover Musgrave	227 535
muniprocessor computer	Reuter	057	Three-dimensional visualization of many-body system dynamics	Bernaschi	254
Mechanical design FEMvis: An interactive visualization			Traffic studies of unbuffered Delta networks	Heidelberger	288
tool for mechanical analysis IBM System/390 air-cooled alumina	Bala	4	Visual interpretation of multidimensional computations and		
thermal conduction module Three-dimensional visualization of	Knickerbocker	330	transistor design Visualization in a VLSI design	Farrell	26
many-body system dynamics	Bernaschi	254	automation system	DeMaris	238
Volume visualization of 3D finite element method results	Koyamada	12	Visualization of molecular dynamics via ray-tracing and animation in a		
Metal films			vectorized environment Visualizing parallel execution of	Williams	108
Making negatives and plates for printing by electroerosion:			FORTRAN programs Visualizing processes in neural	Szelényi	270
Introduction and overview	Pennington	458	networks Visualizing structure in high-	Wejchert	244
Making negatives and plates for printing by electroerosion: I.			dimensional multivariate data Volume visualization of 3D finite	Young	97
Physical principles Making negatives and plates for	Cohen	466	element method results	Koyamada	12
printing by electroerosion: II.  Larger-scale fabrication and testing	Cohen	489	Multilevel interconnections		
Making negatives and plates for printing by electroerosion: III. Use			IBM Enterprise System/9000 Type 9121 Model 320 air-cooled		
of the direct negative and direct	Cohen	512	processor technology	Gani	342
plate Multiplication of a symmetric banded	Conen	512	Multiprocessors Automatic partitioning of a program		
matrix by a vector on a vector multiprocessor computer	Reuter	697	dependence graph into parallel tasks	Sarkar	779
Models and modeling			Clustering IBM Enterprise System/3090 computers for parallel		
A numerically intensive computing environment: IBM 3090 and the			execution of FORTRAN programs	Scarborough	667
PS/2 Model 80	Arnold	140	Design choices for the TOP-1 multiprocessor workstation	Shimizu	591

860

Execution of automatically	a		Hierarchically interconnected		
parallelized APL programs on RP3 Exploring database parallelism in a	Ching	767	multiprocessors  Low-overhead scheduling of nested	Franaszek	603
message-passing multiprocessor Further results using the overhead	Lorie	681	parallelism  Multiplication of a symmetric banded	Hummel	743
model for parallel systems Hierarchically interconnected	Flatt	721	matrix by a vector on a vector multiprocessor computer	Reuter	697
multiprocessors  Low-overhead scheduling of nested	Franaszek	603	Operating system support for parallel programming on RP3	Bryant	617
parallelism  Multiplication of a symmetric banded	Hummel	743	The IBM Victor V256 partitionable multiprocessor	Shea	573
matrix by a vector on a vector multiprocessor computer	Reuter	697	The parallel C (pC) programming language	Canetti	727
Operating system support for parallel programming on RP3	Bryant	617	The Parallel Processing Compute Server		
The IBM Victor V256 partitionable	•		The RP3 program visualization	Ammann	653
multiprocessor  The parallel C (pC) programming	Shea	573	environment Waveform-relaxation-based circuit	Kimelman	635
language The Parallel Processing Compute	Canetti	727	simulation on the Victor V256 parallel processor	Johnson	707
Server The RP3 program visualization	Ammann	653	Performance measurement and prediction		
environment	Kimelman	635	A trace-driven study of CMS file references	Bozman	815
Waveform-relaxation-based circuit simulation on the Victor V256			Design and performance of the IBM	DOZIIIAII	613
parallel processor	Johnson	707	Enterprise System/9000 Type 9121 Vector Facility	Slegel	367
Networks Hierarchically interconnected			Further results using the overhead model for parallel systems	Flatt	721
multiprocessors Traffic studies of unbuffered Delta	Franaszek	603	Hierarchically interconnected multiprocessors	Franaszek	603
networks	Heidelberger	288	Low-overhead scheduling of nested parallelism	Hummel	743
Operating systems			The IBM Victor V256 partitionable multiprocessor	Shea	573
Clustering IBM Enterprise System/3090 computers for parallel			Traffic studies of unbuffered Delta		
execution of FORTRAN programs Design choices for the TOP-1	Scarborough	667	networks	Heidelberger	288
multiprocessor workstation Low-overhead scheduling of nested	Shimizu	591	Printing technology  Making negatives and plates for		
parallelism	Hummel	743	printing by electroerosion: Introduction and overview	Pennington	458
Operating system support for parallel programming on RP3	Bryant	617	Making negatives and plates for printing by electroerosion: I.		
The Parallel Processing Compute Server	Ammann	653	Physical principles  Making negatives and plates for	Cohen	466
Packaging			printing by electroerosion: II.  Larger-scale fabrication and testing	Cohen	489
IBM Enterprise System/9000 Type 9121 Model 320 air-cooled			Making negatives and plates for	Conen	409
processor technology IBM System/390 air-cooled alumina	Gani	342	printing by electroerosion: III. Use of the direct negative and direct	~ ·	
thermal conduction module	Knickerbocker	330	plate	Cohen	512
Parallal processing			Program visualization The RP3 program visualization		
Parallel processing Automatic partitioning of a program			environment	Kimelman	635
dependence graph into parallel tasks	Combran	779	Programming languages		
Clustering IBM Enterprise	Sarkar	119	Execution of automatically parallelized APL programs on RP3	Ching	767
System/3090 computers for parallel execution of FORTRAN programs	Scarborough	667	Low-overhead scheduling of nested parallelism	Hummel	743
Design and performance of the IBM Enterprise System/9000 Type 9121			The parallel C (pC) programming		
Vector Facility Design choices for the TOP-1	Slegel	367	language  Relational databases	Canetti	727
multiprocessor workstation Execution of automatically	Shimizu	591	Exploring database parallelism in a	Tauta	
parallelized APL programs on RP3 Exploring database parallelism in a	Ching	767	message-passing multiprocessor  Semiconductor devices	Lorie	681
message-passing multiprocessor Further results using the overhead	Lorie	681	Visual interpretation of		
- armer resures using the overhead			multidimensional commutations		
model for parallel systems	Flatt	721	multidimensional computations and transistor design	Farrell	26

861

Semiconductor technology			Solid modeling		
A 128Kb CMOS static random-	Chu	321	Application of visualization tools in solid mechanics	Moini	156
access memory A 3072 × 32-stage TDI imaging	Cita	321	Data visualization using a general-		100
device	Schlig	283	purpose renderer	Doi	45
An adder design optimized for DCS	Ü		FEMvis: An interactive visualization		
logic	Weinberger	352	tool for mechanical analysis	Bala	4
Differential current switch—High	TO the Heaven	212	Visual interpretation of		
performance at low power	Eichelberger	313	multidimensional computations and transistor design	Farrell	26
Visual interpretation of multidimensional computations and			Volume visualization of 3D finite	ranch	20
transistor design	Farrell	26	element method results	Koyamada	12
Visualization in a VLSI design	1 41.1011		•••••	,	
automation system	DeMaris	238	Systems architecture and development		
ř			Design and performance of the IBM		
			Enterprise System/9000 Type 9121	61 1	267
Simulation			Vector Facility	Slegel	367
A numerically intensive computing environment: IBM 3090 and the			IBM Enterprise System/9000 Type 9121 system controller and		
PS/2 Model 80	Arnold	140	memory subsystem design	Curran	357
An interactive graphic tool to plot	Ailloid	140	The IBM Enterprise System/9000	Cu	
the structure of large sparse			Type 9121 air-cooled processor	Hajek	307
matrices	Paolini	231		·	
Animation of computer simulations			Vector computers		
of two-dimensional turbulence and			Multiplication of a symmetric banded		
three-dimensional flows	Briscolini	119	matrix by a vector on a vector	D4	697
Application of visualization tools in	N.f., ii	156	multiprocessor computer	Reuter	097
solid mechanics	Moini	156	VLSI		
Correlative visualization techniques for multidimensional data	Treinish	184	A 128Kb CMOS static random-		
Data visualization using a general-	Tremism	101	access memory	Chu	321
purpose renderer	Doi	45	IBM Enterprise System/9000 Type		
Displaying morphological and			9121 Model 320 air-cooled		
lithological maps: A numerically			processor technology	Gani	342
intensive computing and		<b>7</b> 0	Visualization in a VLSI design	DeMaris	238
visualization application	Barberi	78	automation system Waveform-relaxation-based circuit	Demails	230
FEMvis: An interactive visualization	Bala	4	simulation on the Victor V256		
tool for mechanical analysis Graphic workstations and	Dala	4	parallel processor	Johnson	707
supercomputers: An integrated			paramet Processor		
environment for simulation of fluid					
dynamics problems	Piccolo	167			
IDB: An image database system	Turtur	88			
Interactive analysis of the topology	75.1.1.	50			
of 4D vector fields	Dickinson Bookin	59 205			
Interactive Quantitative Visualization Picture processing and three-	Peskin	203			
dimensional visualization of data					
from scanning tunneling and					
atomic force microscopy	Stoll	67			
Picturing randomness on a graphics					
supercomputer	Pickover	227			
The art of fractal landscapes	Musgrave	535			
Three-dimensional visualization of	Bernaschi	254			
many-body system dynamics Visual interpretation of	Bernaschi	234			
multidimensional computations and					
transistor design	Farrell	26			
Visualization in a VLSI design					
automation system	DeMaris	238	•		
Visualization of molecular dynamics					
via ray-tracing and animation in a	Williams	108			
vectorized environment Visualizing parallel execution of	Williams	100			
FORTRAN programs	Szelényi	270			
Visualizing processes in neural	<i>,</i>	3.0			
networks	Wejchert	244			
Visualizing structure in high-					
dimensional multivariate data	Young	97			
Volume visualization of 3D finite	Varamada	12			
element method results	Koyamada	12			