

A Bibliography of Publications of William M. Coughran

William M. Coughran
AT&T Bell Laboratories
600 Mountain Av., Rm. 2T-502
Murray Hill, NJ 07974-0636
USA

Tel: +1 908 582 6619

FAX: ?n/a?

E-mail: wmc@research.bell-labs.com (Internet)

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Abstract

This bibliography records publications of William M. Coughran.

based [BGP⁺92, Cou97]. **Bénard** [BCG⁺84, GCS82, GC84]. **BiCMOS** [PBR⁺92]. **Bifurcations** [CGP92a]. **Bipolar** [PBR⁺92]. **Block** [BCCS89]. **Boundary** [Cou80, Cou84, Cou85].

Title word cross-reference

C₂H₄ [CRSM73]. *IV* [CFS94]. *N₂* [CRSM73].

Adaptive [BCF91, CS90, CPS91].

Advanced [BDR⁺94]. **Algorithm** [CH81].

Algorithms

[BBC⁺90, CJ90, CGP⁺92b, CFS94].

Alternate [BCCS89].

Alternate-Block-Factorization [BCCS89].

Analysis [BCC⁺79, Cou77, CGR87, CJ90].

Analyzer [CGR83]. **Animation** [CG90c].

Applied [BCG94a, BCG94b]. **Approach**

[LFC90]. **Approximate** [Cou80]. **Aspects**

[BCF⁺86, CGR87, SCF⁺86]. **assessment**

[Boi97]. **Augmented** [CFS94].

CAzM [CGR83, CEK⁺89]. **Cell** [GCC88].

Challenges [SC94]. **Chaos** [GCC88].

Characteristics [CGP92a].

Characterization [PBR⁺92]. **Charges**

[CFG89]. **Circuit**

[BDR⁺94, CGR83, CGR87, CFS94, LFC90].

Circuit-Analyzer [CGR83]. **Circuits**

[BCF⁺85]. **CMOS** [CPS88]. **CO** [CRSM73].

Collaboration [CEK⁺89]. **Combined**

[BDR⁺94]. **Complete** [CH81].

computation [Cou97]. **Computational**

[BCF⁺86, CGR87, CPS88, CGP⁺92b, SC94].

Computing [CG89, CGP92a]. **Concerning**

[Cou77]. **Conditions** [Cou84, Cou85].

Conference [Boi97]. **Construct** [CH81].

Construction [Cou77]. **Continuation**

[CPS89, CS90, CFS94]. **Convecting** [CG87].

Convection [GCS82, GCC88, GC84].
Convective [BPC⁺91]. **Coupled**
 [BGP⁺92, BCG94a, BCG94b]. **Current**
 [CGP92a]. **Current-Voltage** [CGP92a].
Curves [CRSM73].

Decomposition [BCG94a, BCG94b].
Design [CEK⁺89, CFS86]. **Development**
 [CFS86]. **Device**
 [BCF⁺86, BCD⁺89, BBC⁺90, BDR⁺94,
 CFG89, CS90, CJ90, CPS91, CFS94, CFS86,
 PCR⁺91, PBR⁺92, SCF⁺86, CPS89].
Device-Circuit [BDR⁺94]. **Devices**
 [BCF⁺85, BCPS92, BDR⁺94, CGP92a,
 SC94]. **Differential** [BCCS89]. **Diffusion**
 [BCF91]. **dimensional** [PBR⁺92].
diminishing [CGR86]. **Discrete**
 [Cou84, Cou85]. **Display** [CG92]. **Domain**
 [BCG94a, BCG94b]. **Drift** [BCF91].
Drift-Diffusion [BCF91]. **Dynamic**
 [CG91].

Editor [CG83]. **Effects** [BCPS92].
Electrical [LFC90]. **Element** [CFS94].
Energy [BPC⁺91, CRSM73]. **enhancement**
 [Boi97]. **Equation** [BCG⁺84]. **Equations**
 [BCCS89, BCG94a, BCG94b, BCF91,
 CRSM73, CFS94]. **Equations-of-motion**
 [CRSM73]. **Evaluation** [BPC⁺91].
Extracting [CFG89].

Factorization [BCCS89]. **Faster** [CS90].
Fitting [CFG89]. **Flows** [CG87, GCC88].
Folds [CGP92a]. **Formation**
 [CG87, GCS82, GC84]. **Fully**
 [BPC⁺91, BGP⁺92]. **Functions** [CG92].

Generation [CPS91]. **Gradient** [CFG89].
Grid [BCF91, CPS91]. **Grove** [CG83].
Guide [BCC⁺79].

HBTs [BPC⁺91, BGP⁺92]. **Hearing**
 [CG91]. **Hierarchical** [BCPS92].
Hydrodynamic [BPC⁺91, BGP⁺92].

Hyperbolic [Cou80, Cou84, Cou85].

IFIP [Boi97]. **II** [CCLW94]. **Incorporating**
 [CFS94]. **Industry** [CEK⁺89]. **Inferno**
 [Cou97]. **Influence** [BPC⁺91]. **Initial**
 [Cou80, Cou84, Cou85]. **Initial-Boundary**
 [Cou80]. **Initial-Boundary-Value**
 [Cou84, Cou85]. **InP** [BGP⁺92]. **InP-based**
 [BGP⁺92]. **Instability** [BCG⁺84].
Integrated [PBR⁺92]. **Interpolating**
 [CH81]. **Iteration** [CJ90]. **Iterative**
 [BCD⁺89].

July [Boi97].

Kingdom [Boi97].

Language [GC83]. **Languages** [CG79].
Large [GCC88]. **Large-Cell** [GCC88].
Latchup [CPS88]. **Library**
 [BCC⁺79, CCGH80, Cou77, CCGH78].
Loess [CG91].

Macromodeling [CGR83]. **Mean** [GCC88].
Meshes [CS90]. **Method** [CRSM73].
Methods [BCD⁺89, CPS88, CPS89].
Microelectronics [CGP⁺92b]. **Mixed**
 [LFC90]. **Mixed-Mode** [LFC90]. **Mode**
 [LFC90]. **Model** [BPC⁺91, BCG⁺84].
Modeling [CS90, CG90b]. **Models** [CFS94].
Modular [CJ90]. **motion** [CRSM73].

NAPLUG [BCC⁺79]. **Near**
 [BCG⁺84, GCS82, GC84]. **Network**
 [Cou97]. **Network-based** [Cou97].
Noncharacteristic [Cou84, Cou85].
Nonequilibrium [BCPS92]. **Nonlinear**
 [GCS82, GC84]. **Note** [Cou77]. **Numerical**
 [BCG⁺84, BCC⁺79, CCGH80, Cou77, CG79,
 CG87, Boi97, CCGH78].

Object [LFC90]. **Object-Oriented**
 [LFC90]. **Onset**
 [BCG⁺84, GCS82, GCC88, GC84].

Oriented [LFC90]. **Outer** [CJ90]. **Oxford** [Boi97].

Parallel [BCG94a, BCG94b]. **Part** [CJ90]. **Partial** [BCCS89]. **Parts** [CCLW94]. **Pattern** [CG87, GCS82, GC84]. **PDE** [BCPS92]. **Philosophy** [CG89]. **Pine** [GC83]. **Polygons** [CG92]. **Potential** [CRSM73]. **Problems** [Cou80, Cou84, Cou85]. **Procedure** [BCCS89]. **proceedings** [Boi97]. **Process** [PBR⁺92]. **Program** [BCC⁺79, Cou77]. **Programming** [GC83]. **Progress** [BBC⁺90].

Quality [Boi97].

Rayleigh [BCG⁺84, GCS82, GC84]. **Refinement** [BCF91].

Scientific [CG89, CG90a, CG90c, Cou97]. **Seeing** [CG91]. **Semiconductor** [BCD⁺89, BBC⁺90, BCPS92, BDR⁺94, CJ90, CGP92a, SCF⁺86, SC94, CPS89]. **Semiconductors** [CCLW94]. **Shaded** [CG92]. **Sight** [CG90a]. **Silicon** [BCF⁺85, CG90b, PCR⁺91]. **Simulation** [BCF⁺85, BCF⁺86, BCD⁺89, BBC⁺90, BGP⁺92, BCPS92, BDR⁺94, CPS88, CJ90, CPS91, CFS94, LFC90, PCR⁺91, PBR⁺92, SCF⁺86, CGR86, CPS89]. **Simulations** [CFG89, SC94]. **Software** [CG79, CEK⁺89, Boi97]. **Solution** [BCG⁺84, Cou80]. **Some** [SCF⁺86]. **Sound** [CG90a, CG92]. **Space** [CG92]. **Spatial** [CS90]. **Splines** [CH81, CGR86]. **State** [CPS88]. **Steady** [CPS88]. **Steady-State** [CPS88]. **Strategy** [BCF91]. **Studies** [CG87, CG90b]. **Submicron** [PBR⁺92]. **Supercomputers** [CFS86]. **Support** [CCGH80, CCGH78]. **Surfaces** [CG91]. **Systems** [BCCS89].

TC2 [Boi97]. **TC2/WG2.5** [Boi97].

Techniques [CG90c]. **Technology** [CFS86, PBR⁺92]. **Thermal** [BGP⁺92]. **Three** [CG92, PBR⁺92]. **Three-dimensional** [PBR⁺92]. **Time** [CG92]. **Tools** [CG89]. **Transient** [BCF⁺85, BCF⁺86, CJ90]. **Transistor** [CFG89]. **Transistors** [PBR⁺92]. **Transport** [BCPS92, BCG94a, BCG94b].

ULSI [PCR⁺91, SC94]. **United** [Boi97]. **University** [CEK⁺89]. **University/Industry** [CEK⁺89]. **User** [BCC⁺79]. **Using** [BPC⁺91, CG92, PBR⁺92, CS90].

Value [Cou80, Cou84, Cou85]. **Variables** [CG92]. **Variation** [CGR86]. **via** [Cou97]. **Video** [CG90a]. **VLSI** [CPS91, CFS86]. **Voltage** [CGP92a].

WG2.5 [Boi97]. **Working** [Boi97].

References

Bank:1990:RPA

- [BBC⁺90] R. E. Bank, J. Bürgler, W. M. Coughran, Jr., W. Fichtner, and R. K. Smith. Recent progress in algorithms for semiconductor device simulation. In R. E. Bank, R. Bulirsch, and K. Merten, editors, *Mathematical Modelling and Simulation of Electrical Circuits and Semiconductor Devices*, pages 125–140. Birkhäuser, Cambridge, MA, USA; Berlin, Germany; Basel, Switzerland, 1990.

Bolstad:1979:NAP

- [BCC⁺79] J. H. Bolstad, T. F. Chan, W. M. Coughran, Jr., W. D. Gropp, E. H. Grosse, M. T. Heath, R. J. LeVeque, F. T. Luk, S. G. Nash,

and L. N. Trefethen. Numerical analysis program library user's guide (NAPLUG). User Note 82, SLAC Computing Services, 1979. First issued in 1976 by Chan, Coughran, Heath, and Luk.

Bank:1989:ABF

- [BCCS89] R. E. Bank, T. F. Chan, W. M. Coughran, Jr., and R. K. Smith. The alternate-block-factorization procedure for systems of partial differential equations. *BIT*, 29(4): 938–954, December 1989. CODEN BITTEL, NBITAB. ISSN 0006-3835 (print), 1572-9125 (electronic).

Bank:1989:IMS

- [BCD⁺89] R. E. Bank, W. M. Coughran, Jr., M. A. Driscoll, R. K. Smith, and W. Fichtner. Iterative methods in semiconductor device simulation. *Comput. Phys. Comm.*, 53 (1–3):201–212, May 1989. CODEN CPHCBZ. ISSN 0010-4655 (print), 1879-2944 (electronic). URL <http://www.sciencedirect.com/science/article/pii/0010465589901604>.

Bank:1985:TSS

- [BCF⁺85] R. E. Bank, W. M. Coughran, Jr., W. Fichtner, E. H. Grosse, D. J. Rose, and R. K. Smith. Transient simulation of silicon devices and circuits. *IEEE Transactions on Computer-Aided Design*, CAD-4: 436–451, 1985. Simultaneously published in IEEE Transactions on Electron Devices ED-32.

Bank:1986:CATa

- [BCF⁺86] R. E. Bank, W. M. Coughran, Jr., W. Fichtner, D. J. Rose, and R. K. Smith. Computational aspects of transient device simulation. In W. L. Engl, editor, *Process and Device Simulation*, pages 229–264. North Holland-Elsevier Science Publishers, Amsterdam, New York, Oxford, 1986.

Buergler:1991:AGRa

- [BCF91] J. Bürgler, W. M. Coughran, Jr., and W. Fichtner. An adaptive grid refinement strategy for the drift-diffusion equations. *IEEE Transactions on Computer-Aided Design*, 10:1251–1258, 1991.

Bjorstad:1984:NSMa

- [BCG⁺84] P. E. Bjørstad, W. M. Coughran, Jr., H. S. Greenside, D. J. Rose, and N. L. Schryer. Numerical solution of a model equation near the onset of the Rayleigh–Bénard instability. In G. Birkhoff and A. Schoenstadt, editors, *Elliptic Problem Solvers II*, pages 531–543. Academic Press, New York, NY, USA, 1984.

Bjorstad:1994:PDDa

- [BCG94a] P. E. Bjørstad, W. M. Coughran, Jr., and E. H. Grosse. Parallel domain decomposition applied to coupled transport equations. Numerical Analysis Manuscript 94-3, AT&T Bell Laboratories, Murray Hill, NJ, USA, 1994. URL <ftp://netlib.bell-labs.com/netlib/att/cs/doc/94/4-03.ps.gz>.

Bjorstad:1994:PDDb

- [BCG94b] Petter Bjørstad, W. M. Coughran, Jr., and Eric Grosse. Parallel domain decomposition applied to coupled transport equations. In David E. Keys and Jinchao Xu, editors, *Domain Decomposition Methods in Scientific and Engineering Computing*, pages 369–380. American Mathematical Society, Providence, RI, USA, 1994. ISBN 0-8218-5171-3. LCCN QA402.2 I55 1993. URL <ftp://cm.bell-labs.com/cm/cs/doc/94/4-03.ps.gz>.

Benvenuti:1992:HPSa

- [BCPS92] A. Benvenuti, W. M. Coughran, Jr., M. R. Pinto, and N. L. Schryer. Hierarchical PDE simulation of nonequilibrium transport effects in semiconductor devices. In *Workshop on Numerical Modeling of Processes and Devices for Integrated Circuits: NUPAD IV. Technical Digest*, pages 155–160. IEEE, 1109 Spring Street, Suite 300, Silver Spring, MD 20910, USA, 1992. Extended abstract.

Buergler:1994:CDCa

- [BDR⁺94] J. F. Bürgler, H. Dettmer, C. Riccobene, W. M. Coughran, Jr., and W. Fichtner. Combined device-circuit simulation for advanced semiconductor devices. In W. M. Coughran, Jr., J. Cole, P. Lloyd, and J. White, editors, *Semiconductors, Part II*, pages 89–107. Springer-Verlag, Berlin, Heidelberg, New York, Tokyo, 1994. ISBN 0-387-94251-3. Pro-

ceedings of the IMA 1991 Summer Program on Semiconductors, Minneapolis.

Benvenuti:1992:CTFa

- [BGP⁺92] A. Benvenuti, G. Ghione, M. R. Pinto, W. M. Coughran, Jr., and N. L. Schryer. Coupled thermal, fully hydrodynamic simulation of InP-based HBTs. In *IEDM Technical Digest '92*, pages 737–740. IEEE, 1109 Spring Street, Suite 300, Silver Spring, MD 20910, USA, 1992.

Boisvert:1997:QNS

- [Boi97] R. F. Boisvert, editor. *Quality of numerical software: assessment and enhancement / proceedings of the IFIP TC2/WG2.5 Working Conference on the Quality of Numerical Software, Assessment and Enhancement, Oxford, United Kingdom, 8–12 July 1996*. Chapman and Hall, Ltd., London, UK, 1997. ISBN 0-412-80530-8. LCCN QA297 .I35 1996.

Benvenuti:1991:EICa

- [BPC⁺91] A. Benvenuti, M. R. Pinto, W. M. Coughran, Jr., N. L. Schryer, C. U. Naldi, and G. Ghione. Evaluation of the influence of convective energy in HBTs using a fully hydrodynamic model. In *IEDM Technical Digest '91*, pages 499–502, 1991.

Chan:1978:NLS

- [CCGH78] Tony F. Chan, William M. Coughran, Jr., Eric H. Grosse, and Michael T. Heath. A

numerical library and its support. Technical Report CS-TR-78-673, Stanford University, Department of Computer Science, Stanford, CA, USA, November 1978. URL <http://i.stanford.edu/TR/CS-TR-78-673.html>.

Chan:1980:NLS

- [CCGH80] Tony F. Chan, William M. Coughran, Jr., Eric H. Grosse, and Michael T. Heath. A numerical library and its support. *ACM Transactions on Mathematical Software*, 6(2):135–145, June 1980. CODEN ACMSCU. ISSN 0098-3500 (print), 1557-7295 (electronic).

Coughran:1994:SIHI

- [CCLW94] W. M. Coughran, Jr., J. Cole, P. Lloyd, and J. White, editors. *Semiconductors, Parts I and II*. Springer-Verlag, Berlin, Heidelberg, New York, Tokyo, 1994. ISBN 0-387-94250-5 and 0-387-94251-3. Proceedings of the IMA 1991 Summer Program on Semiconductors, Minneapolis.

Coughran:1989:CUIC

- [CEK⁺89] W. M. Coughran, Jr., D. J. Erdman, S. W. Kenkel, G. B. Nifong, D. J. Rose, and R. Subrahmanyam. CAzM: University/industry collaboration in design software. In *Eighth Biennial University-Government-Industry Microelectronics Symposium*, pages 102–105, 1989.

[CFG89]

Coughran:1989:ETC

W. M. Coughran, Jr., W. Fichtner, and E. H. Grosse. Extracting transistor charges from device simulations by gradient fitting. *IEEE Transactions on Computer-Aided Design*, 8:380–394, 1989.

Hess:1986:SVT

[CFS86]

W. M. Coughran, Jr., W. Fichtner, and R. K. Smith. Supercomputers in VLSI technology development and device design. In K. Hess, editor, *Large Scale Computational Device Modeling*, page 175. University of Illinois Press, 1986. Abstract.

Coughran:1994:AADSM

[CFS94]

W. M. Coughran, Jr., R. W. Freund, and R. K. Smith. Algorithms for augmented device simulation models incorporating IV continuation and circuit element equations. In *Workshop on Numerical Modeling of Processes and Devices for Integrated Circuits: NUPAD V. Technical Digest*, pages 127–128. IEEE, 1109 Spring Street, Suite 300, Silver Spring, MD 20910, USA, 1994. Extended abstract.

Coughran:1979:NLNS

[CG79]

W. M. Coughran, Jr. and E. H. Grosse. New languages for numerical software. *SIGNUM Newsletter*, 14:73–75, 1979. CODEN SNEWD6. ISSN 0163-5778 (print), 1558-0237 (electronic).

- Coughran:1983:GE**
- [CG83] W. M. Coughran, Jr. and E. H. Grosse. The grove editor. Numerical Analysis Manuscript 83-3, AT&T Bell Laboratories, Murray Hill, NJ, USA, 1983.
- Coughran:1987:PFCF**
- [CG87] W. M. Coughran, Jr. and H. S. Greenside. Numerical studies of pattern formation in convecting flows. *SIAM News* 20, pages 8–9, March 1987.
- Coughran:1989:PSC**
- [CG89] W. M. Coughran, Jr. and Eric Grosse. A philosophy for scientific computing tools. *SIGNUM Newsletter*, 24(2/3): 2–9, April/July 1989. CODEN SNEWD6. ISSN 0163-5778 (print), 1558-0237 (electronic).
- Coughran:1990:SVSS**
- [CG90a] W. M. Coughran, Jr. and E. H. Grosse. Scientific video: Sight and sound. Scientific Video 90-2, AT&T Bell Laboratories, Murray Hill, NJ, USA, 1990. Videotape.
- Coughran:1990:SMS**
- [CG90b] W. M. Coughran, Jr. and E. H. Grosse. Silicon modeling studies. Scientific Video 90-1, AT&T Bell Laboratories, Murray Hill, NJ, USA, 1990. Videotape.
- Farrell:1990:TSA**
- [CG90c] W. M. Coughran, Jr. and Eric Grosse. Techniques for scientific animation. In E. Farrell, editor, *Proceedings of the SPIE*, volume 1259, pages 72–79. SPIE Optical Engineering Press, Bellingham, WA, USA, 1990. Associated videotape in 1259-V collection.
- Coughran:1991:SHD**
- [CG91] W. M. Coughran, Jr. and Eric Grosse. Seeing and hearing dynamic loess surfaces. In *Interface'91 Proceedings*, pages 224–228. Springer-Verlag, Berlin, Heidelberg, New York, Tokyo, 1991. URL <ftp://netlib.bell-labs.com/netlib/att/cs/doc/91/4-07.ps.gz>.
- Gaffney:1992:DFT**
- [CG92] W. M. Coughran, Jr. and Eric Grosse. Display of functions of three space variables and time using shaded polygons and sound. In P. W. Gaffney and E. N. Houstis, editors, *Programming Environments for High-Level Scientific Problem Solving*, pages 271–276. Springer-Verlag, Berlin, Heidelberg, New York, Tokyo, 1992. ISBN 0-444-89176-5. URL <ftp://netlib.bell-labs.com/netlib/att/cs/doc/91/4-09.ps.gz>. IFIP TC 2 WG 2.5 Proceedings of Working Conference on Programming Environments for High-Level Scientific Problem Solving, Karlsruhe.
- Coughran:1992:CFB**
- [CGP92a] W. M. Coughran, Jr., E. H. Grosse, and M. R. Pinto. Computing folds and bifurcations in current-voltage characteristics of semiconductor devices. In *Workshop on Numerical Modeling of*

- Processes and Devices for Integrated Circuits: NUPAD IV. Technical Digest*, pages 149–153. IEEE, 1109 Spring Street, Suite 300, Silver Spring, MD 20910, USA, 1992. Extended abstract. [CH81]
- Coughran:1992:ACM**
- [CGP⁺92b] W. M. Coughran, Jr., E. H. Grosse, M. R. Pinto, C. S. Rafferty, N. L. Schryer, and R. K. Smith. Algorithms for computational microelectronics. Scientific Video 92-1, AT&T Bell Laboratories, Murray Hill, NJ, USA, 1992. Videotape. [CJ90]
- Coughran:1983:CCA**
- [CGR83] W. M. Coughran, Jr., E. H. Grosse, and D. J. Rose. CAzM: A circuit-analyzer with macro-modeling. *IEEE Transactions on Electron Devices*, ED-30:1207–1213, 1983.
- Coughran:1986:VDS**
- [CGR86] William M. Coughran, Jr., Eric Grosse, and Donald J. Rose. Variation diminishing splines in simulation. *SIAM Journal on Scientific and Statistical Computing*, 7 (2):696–705, April 1986. CODEN SIJCD4. ISSN 0196-5204.
- Coughran:1987:ACCA**
- [CGR87] W. M. Coughran, Jr., Eric H. Grosse, and Donald J. Rose. Aspects of computational circuit analysis. In W. Fichtner and M. Morf, editors, *VLSI CAD Tools and Applications*, pages 105–127 (of x + 552). Kluwer Academic Publishers Group, Dordrecht, The Netherlands, 1987.
- ISBN 0-89838-193-2. LCCN TK7874 .V5572 1987.
- Coughran:1981:CIS**
- W. M. Coughran, Jr. and J. G. Herriot. An algorithm to construct complete interpolating splines. Computing Science Technical Report 101, AT&T Bell Laboratories, Murray Hill, NJ, USA, 1981.
- Coughran:1990:MAT**
- W. M. Coughran, Jr. and J. W. Jerome. Modular algorithms for transient semiconductor device simulation, part I: Analysis of the outer iteration. In R. E. Bank, editor, *Computational Aspects of VLSI Design with an Emphasis on Semiconductor Device Simulation*, pages 107–149. American Mathematical Society, Providence, RI, USA, 1990.
- Coughran:1977:NAPL**
- W. M. Coughran, Jr. A note concerning the construction of a numerical analysis program library. Technical Memo 107, SLAC Computing Services, 1977.
- Coughran:1980:IBVP**
- W. M. Coughran, Jr. *On the Approximate Solution of Hyperbolic Initial-Boundary Value Problems*. PhD thesis, Stanford University Computer Science Department, 1980. STAN-CS-80-806.
- Coughran:1984:NBCIBVP**
- W. M. Coughran, Jr. On noncharacteristic boundary conditions for discrete hyperbolic

initial-boundary-value problems. Computing Science Technical Report 94, AT&T Bell Laboratories, Murray Hill, NJ, USA, 1984.

Coughran:1985:NBC

- [Cou85] W. M. Coughran, Jr. On noncharacteristic boundary conditions for discrete hyperbolic initial-boundary-value problems. *Journal of Computational Physics*, 60(1):135–154, August 1985. CODEN JCTPAH. ISSN 0021-9991 (print), 1090-2716 (electronic). URL <http://www.sciencedirect.com/science/article/pii/002199918590021X>.

Coughran:1997:NBS

- [Cou97] W. M. Coughran, Jr. Network-based scientific computation via Inferno. In Boisvert [Boi97], pages 267–269. ISBN 0-412-80530-8. LCCN QA297 .I35 1996.

Coughran:1988:CMSSCLS

- [CPS88] W. M. Coughran, Jr., M. R. Pinto, and R. K. Smith. Computational methods for steady-state CMOS latchup simulation. *IEEE Transactions on Computer-Aided Design*, 7:307–323, 1988.

Coughran:1989:CMS

- [CPS89] W. M. Coughran, Jr., M. R. Pinto, and R. K. Smith. Continuation methods in semiconductor device simulation. *Journal of Computational and Applied Mathematics*, 26(1–2):47–65, June 1989. CODEN JCAMDI. ISSN 0377-0427 (print), 1879-1778 (electronic).

URL <https://www.math.utah.edu/pub/bibnet/authors/c/coughran-william-m.bib>; <http://www.sciencedirect.com/science/article/pii/0377042789901477>.

Coughran:1991:AGG

- [CPS91] W. M. Coughran, Jr., M. R. Pinto, and R. K. Smith. Adaptive grid generation for VLSI device simulation. *IEEE Transactions on Computer-Aided Design*, 10:1259–1275, 1991.

Coughran:1973:EOM

- [CRSM73] W. M. Coughran, Jr., J. Rose, T. Shibuya, and V. McKoy. Equations-of-motion method: Potential energy curves for N₂, CO, C₂H₄. *Journal of Chemical Physics*, 58:2699–2709, 1973. CODEN JCPSA6. ISSN 0021-9606 (print), 1089-7690 (electronic).

Coughran:1990:FDM

- [CS90] W. M. Coughran, Jr. and N. L. Schryer. Faster device modeling using adaptive spatial meshes and continuation. In *Workshop on Numerical Modeling of Processes and Devices for Integrated Circuits: NUPAD III, Technical Digest*, pages 85–86. IEEE Circuits and Systems Society and Electron Devices Society, IEEE, 1109 Spring Street, Suite 300, Silver Spring, MD 20910, USA, June 1990. Extended abstract.

Grosse:1983:PPL

- [GC83] E. H. Grosse and W. M. Coughran, Jr. The pine programming language. *Numerical Analysis Manuscript* 83-4,

AT&T Bell Laboratories, Murray Hill, NJ, USA, 1983. URL <ftp://netlib.bell-labs.com/netlib/att/cs/doc/92/pine.ps.gz>.

Greenside:1984:NPF

- [GC84] H. S. Greenside and W. M. Coughran, Jr. Nonlinear pattern formation near the onset of Rayleigh-Bénard convection. *Physical Review A*, 30:398–428, 1984. CODEN PLRAAN. ISSN 1050-2947 (print), 1094-1622, 1538-4446, 1538-4519.

Greenside:1988:MFOa

- [GCC88] H. S. Greenside, M. C. Cross, and W. M. Coughran, Jr. Mean flows and the onset of chaos in large-cell convection. *Physical Review Letters*, 60:2269–2272, 1988. CODEN PRLTAO. ISSN 0031-9007 (print), 1079-7114 (electronic), 1092-0145.

Greenside:1982:NPF

- [GCS82] H. S. Greenside, W. M. Coughran, Jr., and N. L. Schryer. Nonlinear pattern formation near the onset of Rayleigh-Bénard convection. *Physical Review Letters*, 49:726–729, 1982. CODEN PRLTAO. ISSN 0031-9007 (print), 1079-7114 (electronic), 1092-0145.

Lamb:1990:OOA

- [LFC90] P. Lamb, W. Fichtner, and W. M. Coughran, Jr. An object-oriented approach to mixed-mode electrical circuit simulation. In A. Guasch, editor, *Proceedings of the SCS Multiconference*

on Object-Oriented Simulation, pages 43–48. Society for Computer Simulation, 1990.

Pinto:1992:TDCa

- [PBR⁺92] M. R. Pinto, D. M. Boulin, C. S. Rafferty, R. K. Smith, W. M. Coughran, Jr., I. C. Kizilyalli, and M. J. Thoma. Three-dimensional characterization of bipolar transistors in a submicron BiCMOS technology using integrated process and device simulation. In *IEDM Technical Digest '92*, pages 923–926. IEEE, 1109 Spring Street, Suite 300, Silver Spring, MD 20910, USA, 1992.

Pinto:1991:DSSa

- [PCR⁺91] M. R. Pinto, W. M. Coughran, Jr., C. S. Rafferty, E. Sangiorgi, and R. K. Smith. Device simulation for silicon ULSI. In K. Hess, J. P. Leburton, and U. Ravaioli, editors, *Computational Electronics: Semiconductor Transport and Device Simulation*, pages 3–13. Kluwer Academic Publishers, 1991.

Smith:1994:CCSa

- [SC94] R. K. Smith and W. M. Coughran, Jr. Computational challenges in simulations of ULSI semiconductor devices. In T. N. Mudge and B. D. Shriver, editors, *Proceedings of the 27th Hawaii International Conference on System Sciences*, pages 7–15. IEEE, 1109 Spring Street, Suite 300, Silver Spring, MD 20910, USA, 1994.

Smith:1986:SASa

- [SCF⁺86] R. K. Smith, W. M. Coughran, Jr., W. Fichtner, D. J. Rose, and R. E. Bank. Some aspects of semiconductor device simulation. In R. Glowinski and J.-L. Lions, editors, *Computing Methods in Applied Sciences and Engineering, VII*, pages 3–12. North Holland-Elsevier Science Publishers, Amsterdam, New York, Oxford, 1986.