May 5-7, 1982

14TH ANNUAL ACM SYMPOSIUM ON THEORY OF COMPUTING

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Association for Computing Machinery
P.O. Box 12105
Church Street Station
New York, New York 10249

ADVANCED REGISTRATION FORM
Use this form or facsimile to preregister. Advance registration closes Friday, April 9, 1982. Please mail form with check made payable to ACM-SIGACT Symposium to:

SIGACT-82 REGISTRATION
54 Dr. Barbara B. Simons
IBM Research K51-61F
5600 Cottle Road
San Jose, California 95193

Member of ACM, SIGACT, or IEEE
Computer Society $105.00 (b) □
Non-member $115.00 (b) □
Author $100.00 (b) □
Student $35.00 (a) □

Additional banquet tickets @ $19.00 per ticket number
Wine Tour @ $25.00 per person number total enclosed

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Requests for refunds will be honored until April 16, 1982. After registration closes, all non-student fees will increase by $10.00 per person and student fees will increase by $5.00 per person.
(a)—includes technical sessions, one copy of the conference proceedings, and coffee breaks.
(b)—includes (a), plus reception (Tuesday), luncheons (Wednesday, Thursday, and Friday), and banquet (Thursday evening).
Requests for special dietary considerations should accompany this registration form.

HOTEL RESERVATION FORM
Mail to:
ACM-SIGACT-82
San Francisco Hotel
1234 Market Street
San Francisco, California 94103
(415) 629-8000 collect from California
(800) 227-4747 elsewhere
Please reserve a room for me at the 14th Annual ACM-SIGACT Symposium on Theory of Computing, May 5 through May 7, 1982.

□ Single $50-$55-$65 per day
□ Double (twin) $60-$65-$75 per day
□ Suite $125 per day
□ Family Suite $85 per day
rates subject to 9.75% city tax.

Arrival date ____________________________ a.m. p.m.
Departure date ____________________________ a.m. p.m.

Please send confirmation to:

Name ____________________________
(Please print full name)

Address ____________________________

City ___________________ State _______ Zip _______

SYMPOSIUM PROCEEDINGS ORDER FORM
The 1982 Annual Symposium Proceedings are available postage paid; prices are per copy: (ACM ORDER NO. 508820)
ACM or SIGACT
Member $16.00
Non-member $21.00

Proceedings are ordered prepaid from:
ACM Order Department
P.O. Box 64145
Baltimore, MD 21264

Please send me _______ copies of the 1982 proceedings prepaid.

Amount enclosed _______

Name ____________________________
(Print last name first)

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City ___________________ State _______ Zip _______

One copy of the 1982 proceedings is included in the registration fee; additional copies can be purchased at the symposium for $12.00 each.
Session I:
Monday, May 5, 9:00 a.m.—12:15 p.m.
Crystal Ballroom
Chair: William Rounds, University of Michigan
9:00-9:25
Two Tapes are Better than One for Nondeterministic Machines
Pavel Dürr, Zvi Galil
Slovak Academy of Science, Tel-Aviv University
9:25-9:50
The Tight Deterministic Time Hierarchy
Martin Füredi
University of Tübingen
9:50-10:15
Probabilistic Simulations
Nicholas Pippenger
IBM
10:15
COFFEE BREAK
10:45-11:10
Real-Time Simulation of Multicounters by Oblivious One-Tape Turing Machines
Paul M.B. Vitanyi
Mathematisch Centrum
11:10-11:35
Two Dimensional Alternating Turing Machines
Katsushi Inoue, Itsuo Takanami, Hiroshi Taniguchi
Yamaguchi University
11:35-11:50
Ensembles de Mots Biinfinis
Maurice Nivat, Dominique Perrin
Université Paris 7
11:50-12:15
Trees, Automata, and Games
Un Gurevich, Leo Harrington
Ben-Gurion University and Bowling Green State University, Berkeley
12:15-2:15
LUNCH

Session II:
Monday Afternoon, May 5, 2:15 p.m.—5:25 p.m.
Crystal Ballroom
Chair: Jean Vuillemin, INRIA
2:15-2:40
The Theory of Signature Testing for VLSI
J. Lawrence Carter
IBM
2:40-2:55
How To Assemble Tree Machines
Sandeep N. Bhatt, Charles E. Leiserson
MIT
2:55-3:20
A Layout Strategy for VLSI Which is Provably Good,
Frank Thomson Leighton
MIT
3:20-3:35
Measuring Energy Consumption in VLSI Circuits
Gloria Kissin
University of Toronto
3:35
COFFEE BREAK
4:05-4:20
How to Reuse a "Write-Once" Memory
Ronald Rivest, Adi Shamir
MIT, Weizmann Institute
4:20-4:45
Maintaining Dense Sequential Files in a Dynamic Environment
Dan E. Willard
Bell Laboratories

Session III:
Tuesday, May 6, 9:00—12:00 p.m.
Crystal Ballroom
Chair: Ashok Chandra, IBM
9:00-9:25
Complexity of Relational Query Languages
Moshe Vardi, Stanford
9:25-9:50
Relational Queries Computable in Polynomial Time
Neil Immerman, Tufts
9:50-10:15
Denotational Semantics of Concurrency
J.W. de Bakker, J.C. Zucker
Mathematisch Centrum, Bar-ilan University
10:15
COFFEE BREAK
10:45-11:10
The Complexity of Propositional Linear Temporal Logi
A.P. Sistla, E.M. Clarke
Harvard
11:10-11:35
Decision Procedures and Expressiveness in the Temporal Logic of Branching Time
E. Allen Emerson, Joseph Y. Halpern
Austin, MIT and Harvard
11:35-12:00
A Probabilistic Dynamic Logic
Yishai A. Feldman, David Harel
Weizmann
12:00-2:00
LUNCH

Session IV:
Tuesday Afternoon, May 6, 2:00—5:00 p.m.
Crystal Ballroom
Chair: Ravi Kannan, MIT
2:00-2:25
Communication Complexity
Christos H. Papadimitriou, Michael Sipser
MIT and National Technical University, Athens, MIT
2:25-2:50
Symmetric Complementation
John H. Reif, Harvard
2:50-3:05
Space-Bounded Hierarchies and Probabilistic Computations
Walter L. Ruzzo, Janos Simon, Martin Tompa
Washington, Pennsylvania State, Washington
3:05-3:30
On the Random Oracle Hypothesis
Stuart L. Kurtz
University of Chicago
3:30
COFFEE BREAK
4:00-4:15
Bounds on the Time for Parallel RAM's to Compute Simple Functions
Stephen Cook, Cynthia Dwork
Toronto, Cornell
4:15-4:30
Probabilistic, Nondeterministic, and Alternating Decision Trees
Udi Manber, Martin Tompa
Washington
Session VI (continued)

2:50-3:15  Graph Problems on a Mesh-Connected Processor Array
  Mikhail J. Atallah, S. Rao Kosaraju
  Johns Hopkins

3:15-3:30  On the Time Complexity of Broadcast Communication Schemes
  Albert G. Greenberg
  Washington

3:30  COFFEE BREAK

4:00-4:25  How to Play Mental Poker Keeping Secret all Partial Information
  Shafi Goldwasser, Silvio Micali
  Berkeley

4:25-4:40  A Technique for Proving Lower Bounds for Distributed Election Algorithms
  J. Pachl, E. Korach, D. Rotem
  Waterloo

4:40-5:05  Cryptographic Protocols
  Richard A. DeMillo, Nancy A. Lynch, Michael Merritt
  Georgia Institute of Technology

5:05-5:30  Polynomial Algorithms for Multiple Processor Agreement
  D. Dolev, H.R. Strong
  IBM

Wine Tour:  Thursday Morning, May 8, 9:00 a.m.—5:00 p.m.
  (optional event)
  Chair: Barbara B. Simons, IBM
  Bus departs from and returns to hotel.

14th Annual ACM Symposium on Theory of Computing

Sponsored By:
  The ACM Special Interest Group for Automata and Computability Theory
With the Cooperation of:
  The IEEE Computer Society Technical Committee on Mathematical Foundations of Computing
And:
  IBM Research
  San Jose
SIGACT Chair:
  Larry H. Landweber, University of Wisconsin, Madison
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  Harry R. Lewis, Harvard University
Local Arrangements Chair:
  Barbara B. Simons, IBM Research, San Jose
Entertainment Chair:
  Maria M. Klawe, IBM Research, San Jose
Publicity Chair:
  Walter A. Burkhard, University of California, San Diego

INFORMATION

LOCATION
All technical sessions will be held at the San Francisco Hotel, 1231 Market Street, San Francisco, California 94103 on May 5, 6, and 7, 1982. A block of rooms has been reserved (until April 4, 1982) at the San Francisco Hotel at the rate of $50-$55-$65 per day for single occupancy and $50-$65-$75 for double occupancy. A block of suites each consisting of two adjoining rooms with shared full bath are also reserved. BART stop is at Civic Center (8th Street).

TRANSPORTATION
Taxis from the San Francisco airport to the hotel cost approximately $20.00. Direct limousine service between 6:00 a.m. and 10:00 p.m. from airport to hotel costs $6.50 per person. Call Lorrie's at 826-5450 immediately on arrival at the airport; advanced reservations not accepted. The Airporter buses from the airport to the downtown terminal depart regularly and charge approximately $3.00.

CLIMATE
Daytime temperatures in San Francisco in May average in the fifties. We recommend that you bring a warm jacket for the evenings and something waterproof for the unlikely case of rain.

RECEPTION
The reception will be held Tuesday evening, May 4, 7:30 p.m. to 11:00 p.m. in the Crystal Ballroom of the San Francisco Hotel.

WINE TOUR
After three hectic days of talks and meeting with colleagues, you will need a little relaxation. With this in mind, we have arranged a wine tour in Napa and Sonoma Counties. The tour will depart from the San Francisco Hotel around 9:00 a.m. and return to the hotel around 5:00 p.m. A nice lunch in the Depot Restaurant in the town of Sonoma is included in the price of the tour, which is $25.00.

If you are interested in going on the tour, please get your reservation in as early as possible. Since we may have to limit the number of people coming on the tour, ticket orders will be filled in the order in which they arrive. If your order arrives after the tour is filled, we will of course refund your money. We cannot, however, guarantee ticket refunds for people who have received tickets.

THINGS TO DO
Public transportation in San Francisco is excellent. From the hotel's central location on Market Street, it is possible to take buses, cable cars, or BART to numerous attractions; shopping in major department stores in Union Square or Union Street boutiques; driving in Chinatown or downtown; relaxing and seeing the sights of Golden Gate Park; the glitz and funk of North Beach; the heights of Telegraph Hill's Coit Tower; the bustle of Fisherman's Wharf and Ghiradelli Square.

San Francisco's reputation for fine restaurants is legendary. Among the many obvious choices are Ernie's (expensive and elegant); La Bougogne (dito); Scott's (seafood); Hunan (Chinese); Alioto's (tourist seafood); Tommy's Joynt (corned beef with character); Cafe Sport (Sicilian seafood); Schroeder's (German); Buena Vista Cafe (Irish coffee).

SIGACT FOLLIES
Here's your chance to get into the (SIG)ACT! Following the business meeting Wednesday evening, SIGACT members will display some of their other talents in a collection of skits. With Daniel J. Kleitman as master of ceremonies and Janos Simon as stage manager, we can expect a hilarious evening. To submit a skit to SIGACT FOLLIES, please send a brief description including a list of participants to Maria M. Klawe, IBM Research KS1-61F, 5000 Cottle Road, San Jose, California 95193. Successful entrants will be notified by May 1, 1982.

REGISTRATION DESK:
The symposium registration desk will be open Tuesday evening 6:00 p.m.–8:00 p.m. and all day Wednesday, Thursday, and Friday.

FURTHER INFORMATION:
contact:
  Dr. Barbara B. Simon
  IBM Research KS1-61F
  5600 Cottle Road
  San Jose, California 95193
  (408) 256-0490