

August 31, Thursday

- 8:30 Opening remarks: John Connolly
Chair: John Connolly
- 8:40 – 9:40 Don Weingarten, IBM
Introduction to Numerical Lattice QCD
- 9:40 – 10:20 Anthony Kennedy, Florida State University
The Theory of Hybrid Stochastic Algorithms
- 10:20 – 11:00 Coffee break
Chair: G. W. Stewart
- 11:00 – 11:35 Gene Golub, Stanford University
Some Large Scale Matrix Computation Problems from QCD
- 11:35 – 12:10 Alan Edelman, Massachusetts Institute of Technology
Cross Fertilization between Chemistry/Physics and Numerical Analysis
- 12:10 – 2:00 Lunch
Chair: J. Demmel
- 2:00 – 2:20 Keh-Fei Liu, University of Kentucky
Estimating Traces of Inverse Matrices with Z_2 Noise
- 2:20 – 2:40 Chris Thron, NEC
The PZ Method for Estimating Determinant Ratios,
with Applications
- 2:40 – 3:15 Richard Brower, Boston University
Chronological Inversion Method
- 3:15 – 3:50 Gyan Bhanot, IBM
An $N \cdot \log(N)$ Algorithm for Gravitational Forces and
its Performances on Parallel Computers
- 3:50 – 4:20 Coffee break
Chair: T. Draper
- 4:20 – 4:55 Noel Nachtigal, Oak Ridge National Lab
QMRPACK and Applications
- 4:55 – 5:30 Thomas Lippert, University of Wuppertal, Germany
Experience with Various Iterative Solvers in Full QCD Simulations

September 1, Friday

Chair: J. Mandula

- 8:30 – 9:05 G. W. Stewart, University of Maryland
A Brief Survey of Regularization
- 9:05 – 9:40 Roland W. Freund, AT&T
A Lanczos-Type Method for Multiple Starting Vectors and
its Use in Large-Scale Matrix Computations
- 9:40 – 10:15 Philippe de Forcrand, ETHZ, Switzerland
Linear Solver for the Fermion Propagator
- 10:15 – 10:45 Coffee break
- Chair: G. Golub
- 10:45 – 11:20 Eric De Sturler, ETHZ, Switzerland
Inner-outer Methods with Deflation for Multiple Right Hand Sides
- 11:20 – 11:55 Andreas Frommer, University of Wuppertal, Germany
Exploiting Structure of the Wilson Fermion Matrix
in Krylov Subspace Methods
- 11:55 – 12:30 Anna Hasenfratz, University of Colorado
Fixed Point Actions: an Alternative to Large Scale Simulations?
- 12:30 – 2:00 Lunch
- Chair: R. Brower
- 2:00 – 2:35 Jim Demmel, UC Berkeley
LAPACK, ScaLAPACK and Template
- 2:35 – 3:10 C. Edwards, UT Austin
A Parallel Infrastructure for Scalable Adaptive Finite Element Methods
- 3:10 – 3:45 Lothar Reichel, Kent State University
An Adaptive Preconditioner for Non-symmetric Linear Systems
- 3:45 – 4:15 Coffee break

September 1, Friday (continued)

Chair: T. Chan

- 4:15 - 4:50 Dan Sorensen, Rice University
Implicitly Restarted Arnoldi/Lanczos Methods for Large Scale
Eigenvalue Problems
- 4:50 - 5:25 Daniela Calvetti, Stevens Institute of Technology
Iterative Methods for the Computation of a Few Eigenvalues
of a Large Symmetric Matrix
- 7:00 Dinner at Boone Tavern, Berea

September 2, Saturday

Chair: K.F. Liu

- 9:00 - 9:35 George Hockney, Fermi Lab
Fermi Lab's Experience with Wilson Quark Inverters
- 9:35 - 10:10 Tony Chan, UCLA
Domain Decomposition Algorithms from a Sparse Matrix Point of View
- 10:10 - 10:40 Coffee break
- Chair: Z. Bai
- 10:40 - 11:15 Steve Gottlieb, Indiana University
Status of QCD Spectrum Calculations — Numerical and
Computational Requirements
- 11:15 - 12:15 Panel discussion
- 12:15 - Lunch and workshop Adjourns