## SIAM ALA18 At-a-Glance

### Friday May 4

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
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<tbody>
<tr>
<td>8:00 AM - 12:00 PM</td>
<td>Registration</td>
<td>Tsang Chan Sik Yue Auditorium Lobby, 2/F Academic and Administration Building</td>
</tr>
<tr>
<td>1:30 PM - 3:30 PM</td>
<td>Welcome Remarks</td>
<td>Tsang Chan Sik Yue Auditorium, 2/F Academic and Administration Building</td>
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<tr>
<td>8:40 AM - 8:45 AM</td>
<td>Welcome Remarks</td>
<td>Tsang Chan Sik Yue Auditorium Lobby, 2/F Academic and Administration Building</td>
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<tr>
<td>8:45 AM - 9:30 AM</td>
<td>Coffee Break</td>
<td>Lobby of Lam Woo International Conference Centre</td>
</tr>
<tr>
<td>9:30 AM - 10:15 AM</td>
<td>Concurrent Sessions</td>
<td>2/F Academic and Administration Building</td>
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<tr>
<td>10:15 AM - 10:45 AM</td>
<td>Coffee Break</td>
<td>Lobby of Lam Woo International Conference Centre</td>
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<tr>
<td>10:45 AM - 12:45 PM</td>
<td>Concurrent Sessions</td>
<td>2/F Academic and Administration Building</td>
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### MS01 Advances in High-Performance Sparse Matrix Computation
- **WLB204**

### MS05 Coupled Matrix and Tensor Decompositions: Theory and Methods
- **WLB205**

### MS10 Part I Generalized Inverses and the Linear Least Squares
- **WLB104**

### MS15 Part I Low-Rank and Toeplitz-Related Structures in Applications and Algorithms
- **WLB109**

### MS19 Part I Nonlinear Eigenvalue Problems and Applications
- **WLB103**

### MS41 Part I The Spectrum of Hypergraphs via Tensors
- **WLB210**
- **CS01** Contributed Session 01
- **WLB211**

### MS02 Advances in Preconditioning and Iterative Methods
- **WLB204**

### MS10 Part II Generalized Inverses and the Linear Least Squares
- **WLB104**

### MS13 Large-Scale Matrix and Tensor Optimization
- **WLB205**

### MS15 Part II Low-Rank and Toeplitz-Related Structures in Applications and Algorithms
- **WLB109**

### MS19 Part II Nonlinear Eigenvalue Problems and Applications
- **WLB103**

### MS41 Part II The Spectrum of Hypergraphs via Tensors
- **WLB210**
- **CS02** Contributed Session 02
- **WLB211**

### Saturday May 5

<table>
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<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>8:00 AM - 12:00 PM</td>
<td>Registration</td>
<td>Tsang Chan Sik Yue Auditorium Lobby, 2/F Academic and Administration Building</td>
</tr>
<tr>
<td>1:30 PM - 3:30 PM</td>
<td>Lunch Break</td>
<td>Tsang Chan Sik Yue Auditorium Lobby, 2/F Academic and Administration Building</td>
</tr>
</tbody>
</table>
| 8:45 AM - 9:30 AM  | IP4 Comparative Spectral Decompositions for Personalized Cancer Diagnostics and Prognostics
- **Yangfeng Su, Fudan University**
- **Tsang Chan Sik Yue Auditorium, 2/F Academic and Administration Building** |
| 9:30 AM - 10:15 AM | IP5 Theory and Computation of 2D Eigenvalue Problems
- **Yangfeng Su, Fudan University**
- **Tsang Chan Sik Yue Auditorium, 2/F Academic and Administration Building** |
| 10:15 AM - 10:45 AM| Coffee Break                                                           | Lobby of Lam Woo International Conference Centre |
| 10:45 AM - 12:45 PM| Concurrent Sessions                                                    | 2/F Academic and Administration Building       |

### MS03 Asynchronous Iterative Methods in Numerical Linear Algebra and Optimization
- **WLB210**

### MS06 Part I Discovery from Data
- **AAB201**

### MS07 Part I Domain Decomposition Methods for Heterogeneous and Large-Scale Problems
- **WLB103**

### MS12 Part I Large-Scale Eigenvalue Problems and Applications
- **WLB104**

### MS18 Part I Matrix Optimization and Applications
- **WLB109**

### MS22 Part I Numerical Methods for Ground and Excited State Electronic Structure Calculations
- **WLB204**

### MS35 Part I Some Recent Applications of Krylov Subspace Methods
- **WLB205**
- **CS03** Contributed Session 03
- **WLB208**

### SIAG/LA Business Meeting
- **Tsang Chan Sik Yue Auditorium, 2/F Academic and Administration Building**

### SIAG/LA Business Meeting
- **Renfrew Restaurant, 2/F, David C Lam Building**

### Welcoming Reception
- **Renfrew Restaurant, 2/F, David C Lam Building**
1:45 PM - 3:45 PM  
Concurrent Sessions

MS07 Part II Domain Decomposition Methods for Heterogeneous and Large-Scale Problems  
WLB103

MS12 Part II Large-Scale Eigenvalue Problems and Applications  
WLB104

MS18 Part II Matrix Optimization and Applications  
WLB109

MS22 Part II Numerical Methods for Ground and Excited State Electronic Structure Calculations  
WLB204

MS27 Part I Preconditioners for Ill-Conditioned Linear Systems in Large Scale Scientific Computing  
WLB201

MS33 Part I Recent Advances in Tensor Based Data Processing  
WLB207

MS35 Part II Some Recent Applications of Krylov Subspace Methods  
WLB205

CS05 Contributed Session 05  
AAB201

3:45 PM - 4:15 PM  
Coffee Break  
Lobby of Lam Woo International Conference Centre

4:15 PM - 6:15 PM  
Concurrent Sessions

MS12 Part III Large-Scale Eigenvalue Problems and Applications  
WLB104

MS18 Part III Matrix Optimization and Applications  
WLB109

MS20 Nonlinear Perron-Frobenius Theory and Applications  
WLB103

MS26 Preconditioners for Fractional Partial Differential Equations and Applications  
WLB204

MS27 Part II Preconditioners for Ill-Conditioned Linear Systems in Large Scale Scientific Computing  
WLB201

MS33 Part II Recent Advances in Tensor Based Data Processing  
WLB207

MS35 Part III Some Recent Applications of Krylov Subspace Methods  
WLB205

CS05 Contributed Session 05  
AAB201

Sunday  
May 6

8:00 AM - 12:00 PM  
Registration  
Tsang Chan Sik Yue Auditorium Lobby, 2/F Academic and Administration Building

8:45 AM - 9:30 AM  
IP6 On the Design of Algebraic Multi-grid for High Performance Computers  
Ulrike Meier Yang, Lawrence Livermore National Laboratory  
Tsang Chan Sik Yue Auditorium, 2/F Academic and Administration Building

9:30 AM - 10:15 AM  
IP7 Nonlinear Eigenvalue Problems: Interpolatory Algorithms and Transient Dynamics  
Mark Embree, Virginia Tech  
Tsang Chan Sik Yue Auditorium, 2/F Academic and Administration Building

10:15 AM - 10:45 AM  
Coffee Break  
Lobby of Lam Woo International Conference Centre

10:45 AM - 12:45 PM  
Concurrent Sessions

Mini-Tutorial Tensor Eigenvectors and Stochastic Processes  
A. Benson, Cornell University and D. Gleich, Purdue University  
AAB201

MS16 Machine Learning: Theory and Practice  
WLB204

MS24 Parallel Sparse Triangular Solve on Emerging Platforms  
WLB205

MS28 Preconditioning for PDE Constrained Optimization  
WLB210

MS36 Part I Tensor Analysis, Computation, and Applications I  
WLB103

MS40 Part I The Perturbation Theory and Structure-Preserving Algorithms  
WLB104

CS06 Contributed Session 06  
WLB109

CS07 Contributed Session 07  
WLB211
### Monday
#### May 7

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<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
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<tbody>
<tr>
<td>8:00 AM - 12:00 PM</td>
<td>Registration</td>
<td>Tsang Chan Sik Yue Auditorium Lobby, 2/F Academic and Administration Building</td>
</tr>
<tr>
<td>8:45 AM - 9:30 AM</td>
<td>SIAG/Linear Algebra Prize Lecture: Generating Polynomials and Symmetric Tensor Decompositions</td>
<td>Tsang Chan Sik Yue Auditorium, 2/F Academic and Administration Building</td>
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<tr>
<td>9:30 AM - 10:05 AM</td>
<td>SIAG/Linear Algebra Early Career Prize Lecture: The Ultraspherical Spectral Method</td>
<td>-academic and Administration Building</td>
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<tr>
<td>10:05 AM - 10:35 AM</td>
<td>Coffee Break</td>
<td>Lobby of Lam Woo International Conference Centre</td>
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<td>10:35 AM - 12:35 PM</td>
<td>Concurrent Sessions</td>
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#### Concurrent Sessions

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<thead>
<tr>
<th>Session</th>
<th>Title</th>
<th>Location</th>
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<tbody>
<tr>
<td>MS06</td>
<td>Discovery from Data</td>
<td>AAB201</td>
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<tr>
<td>MS17</td>
<td>Matrix Functions and Their Applications</td>
<td>WLB210</td>
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<tr>
<td>MS30</td>
<td>Rank Structured Methods for Challenging Numerical Computations</td>
<td>WLB204</td>
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<tr>
<td>MS31</td>
<td>Rational Krylov Methods and Applications</td>
<td>WLB103</td>
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<tr>
<td>MS34</td>
<td>Recent Applications of Rank Structures in Matrix Analysis</td>
<td>WLB205</td>
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<td>MS36</td>
<td>Tensor Analysis, Computation, and Applications</td>
<td>WLB103</td>
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<tr>
<td>MS40</td>
<td>The Perturbation Theory and Structure-Preserving Algorithms</td>
<td>WLB104</td>
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<tr>
<td>CS08</td>
<td>Contributed Session 08</td>
<td>WLB211</td>
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### Tuesday
#### May 8

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<th>Time</th>
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<tbody>
<tr>
<td>12:30 PM</td>
<td>Lunch Break</td>
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<tr>
<td>1:35 PM</td>
<td>Poster Sessions</td>
<td>Tsang Chan Sik Yue Auditorium Lobby, 2/F Academic and Administration Building</td>
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<td>3:00 PM</td>
<td>Coffee Break</td>
<td>Lobby of Lam Woo International Conference Centre</td>
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<td>3:30 PM</td>
<td>Concurrent Sessions</td>
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<tr>
<td>MS09</td>
<td>Exploiting Low-Complexity Structures in Data Analysis: Theory and Algorithms</td>
<td>WLB104</td>
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<tr>
<td>MS14</td>
<td>Low Rank Matrix Approximations with HPC Applications</td>
<td>WLB109</td>
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<tr>
<td>MS23</td>
<td>Optimization Methods on Matrix and Tensor Manifolds</td>
<td>WLB204</td>
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<tr>
<td>MS25</td>
<td>Polynomial and Rational Matrices</td>
<td>WLB205</td>
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<tr>
<td>MS32</td>
<td>Recent Advances in Linear Algebra for Uncertainty Quantification</td>
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<tr>
<td>MS37</td>
<td>Tensor Analysis, Computation, and Applications</td>
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<td>CS11</td>
<td>Contributed Session 11</td>
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<td>MS06</td>
<td>Discovery from Data</td>
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<td>MS09</td>
<td>Exploiting Low-Complexity Structures in Data Analysis: Theory and Algorithms</td>
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<td>Low Rank Matrix Approximations with HPC Applications</td>
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<td>MS23</td>
<td>Optimization Methods on Matrix and Tensor Manifolds</td>
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<td>Recent Advances in Linear Algebra for Uncertainty Quantification</td>
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<tr>
<td>CS10</td>
<td>Contributed Session 10</td>
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Tuesday
May 8

8:00 AM - 12:00 PM
Registration
Tsang Chan Sik Yue Auditorium Lobby, 2/F Academic and Adminstration Building

8:45 AM - 9:30 AM
IP8 Enlarged Krylov Subspace Methods and Robust Preconditioners
Laura Grigori, INRIA Paris
Tsang Chan Sik Yue Auditorium, 2/F Academic and Administration Building

9:30 AM - 10:15 AM
IP9 Interpolative Decomposition and Its Applications
Lexing Ying, Stanford University
Tsang Chan Sik Yue Auditorium, 2/F Academic and Administration Building

10:15 AM - 10:45 AM
Coffee Break
Lobby of Lam Woo International Conference Centre

10:45 AM - 12:45 PM
Concurrent Sessions

MS04 Part I Constrained Low-Rank Matrix and Tensor Approximations
WLB103
MS08 Part I Efficient Kernel Methods and Numerical Linear Algebra
WLB104
MS11 Iterative Solvers for Parallel-in-Time Integration
WLB109
MS21 Part I Numerical Linear Algebra Algorithms and Applications in Data Science
WLB204
MS39 Part I Tensors and Multilinear Algebra
WLB205
MS42 Part I Tridiagonal Matrices and Their Applications in Physics and Mathematics
WLB210
CS12 Contributed Session 12
WLB211

12:45 PM - 1:45 PM
Lunch Break

1:45 PM - 2:30 PM
IP10 Fast Algorithms from Low-Rank Updates
Daniel Kressner, École Polytechnique Fédérale de Lausanne
Tsang Chan Sik Yue Auditorium, 2/F Academic and Administration Building

2:30 PM - 3:00 PM
Coffee Break
Lobby of Lam Woo International Conference Centre

3:00 PM - 5:00 PM
Concurrent Sessions

MS04 Part II Constrained Low-Rank Matrix and Tensor Approximations
WLB103
MS08 Part II Efficient Kernel Methods and Numerical Linear Algebra
WLB104
MS21 Part II Numerical Linear Algebra Algorithms and Applications in Data Science
WLB204
MS39 Part II Tensors and Multilinear Algebra
WLB205
MS42 Part II Tridiagonal Matrices and Their Applications in Physics and Mathematics
WLB210
CS13 Contributed Session 13
WLB211
CS14 Contributed Session 14
WLB109