### Friday, June 22
Room: Plenary Room

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Title</th>
<th>Presenter(s)</th>
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<tbody>
<tr>
<td>9:00–9:45</td>
<td>IP 1</td>
<td><strong>Computations with some classes of matrices related to P-matrices</strong></td>
<td>Juan Manuel Peña (Chair: José Mas)</td>
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<tr>
<td>10:10–10:55</td>
<td>IP 2</td>
<td><strong>Reduction of quadratic matrix polynomials to triangular form</strong></td>
<td>Françoise Tisseur (Chair: Froilán M. Dopico)</td>
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<tr>
<td>11:00–12:40</td>
<td>MS 74</td>
<td><strong>Recent advances in the numerical solution of large scale matrix</strong></td>
<td>Valeria Simoncini and Daniel B. Szyld</td>
</tr>
<tr>
<td>11:00–11:25</td>
<td></td>
<td><em>Hierarchical and Multigrid methods for matrix and tensor equations</em></td>
<td>Lars Grasedyck</td>
</tr>
<tr>
<td>11:25–11:50</td>
<td></td>
<td><em>A Survey on Newton-ADI based solvers for large scale AREs</em></td>
<td>Jens Saak,</td>
</tr>
<tr>
<td>11:50–12:15</td>
<td></td>
<td><em>An invariant subspace method for large-scale algebraic Riccati and Bernoulli equations</em></td>
<td>Luca Amodei</td>
</tr>
<tr>
<td>12:15–12:40</td>
<td></td>
<td><em>Delay Lyapunov equations and model order reduction of time delay systems</em></td>
<td>Tobias Damm</td>
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### MS 70  
**Accurate algorithms and applications**  
Organizer: Roberto Barrio and Siegfried M. Rump

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<tr>
<td>11:00–11:25</td>
<td>High precision and accurate algorithms in Physics and Mathematics</td>
<td>Roberto Barrio</td>
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<tr>
<td>11:25–11:50</td>
<td>Accurate evaluation of 1D and 2D polynomials in Bernstein form</td>
<td>Hao Jiang,</td>
</tr>
<tr>
<td>11:50–12:15</td>
<td>Some issues related to double roundings</td>
<td>Jean-Michel Muller</td>
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<tr>
<td>12:15–12:40</td>
<td>Error bounds for floating-point summation and dot product</td>
<td>Siegfried M. Rump</td>
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<tr>
<td>11:00–12:40</td>
<td>MS 69</td>
<td>Advances in sparse matrix Factorization</td>
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<tr>
<td>11:00–11:25</td>
<td></td>
<td>A Sparse inertia-revealing factorization</td>
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<td>11:25–11:50</td>
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<td>Multifrontal factorization on heterogeneous multicore systems</td>
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<td>11:50–12:15</td>
<td></td>
<td>Towards an optimal parallel approximate sparse factorization algorithm using hierarchically semi-separable structures</td>
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<td>12:15–12:40</td>
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<td>Improving multifrontal methods by means of low-rank approximation techniques</td>
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### MS 71

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<tbody>
<tr>
<td>11:00–11:25</td>
<td>Theoretical and applied aspects of graph Laplacians</td>
<td>Shaun Fallat and Steve Kirkland</td>
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<tr>
<td>11:25–11:50</td>
<td>Potential theory for perturbed Laplacian of finite networks</td>
<td>Margarida Mitjana,</td>
</tr>
<tr>
<td>11:50–12:15</td>
<td>Subclasses of graphs with partial ordering with respect to the spectral radius of generalized graph Laplacians</td>
<td>Josef Leydold</td>
</tr>
<tr>
<td>12:15–12:40</td>
<td>Graph bisection from the principal normalized Laplacian eigenvector</td>
<td>Dragan Stevanovic</td>
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<tr>
<td>11:00–12:40</td>
<td>Some new results on the signless Laplacian of graphs</td>
<td>Slobodan K. Simic</td>
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<tr>
<td>11:00–12:40</td>
<td>MS 75</td>
<td><strong>Points that minimize potential functions</strong></td>
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<td>11:00–11:25</td>
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<td><em>Discretizing compact manifolds with minimal energy</em></td>
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<td>11:25–11:50</td>
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<td><em>Well conditioned spherical designs and potential functions</em></td>
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<td>11:50–12:15</td>
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<td><em>Probabilistic frames in the 2-Wasserstein metric</em></td>
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<tr>
<td>12:15–12:40</td>
<td></td>
<td><em>Numerical minimization of potential energies on specific manifolds</em></td>
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### Linear algebra for structured eigenvalues computations arising from (matrix) polynomials
Organizer: L. Gemignani and R. Vandebril

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<tr>
<td>11:00–11:25</td>
<td>A QR algorithm with generator compression for structured eigenvalue computation</td>
<td>P. Boito</td>
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<tr>
<td>11:25–11:50</td>
<td>Quadratic realizability for structured matrix polynomials</td>
<td>D.S. Mackey</td>
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<tr>
<td>11:50–12:15</td>
<td>Fast computation of zeros of a polynomial</td>
<td>D.S. Watkins</td>
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<tr>
<td>12:15–12:40</td>
<td>Eigenvector recovery of linearizations and the condition number of eigenvalues of matrix polynomials</td>
<td>F. De Terán</td>
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Friday, June 22
Room: 2.12
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<th>Time</th>
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</table>
| 11:00–12:40 | MS 73   | *Algebraic Riccati equations associated with M-matrices: numerical solution and applications*  
Organizer: Beatrice Meini |                 |
| 11:00–11:25 |         | *Monotone convergence of Newton-like methods for M-matrix algebraic Riccati equations*  
Chun-Hua Guo |                 |
| 11:25–11:50 |         | *Accurate solution of M-matrix algebraic Riccati equation by ADDA: alternating-directional doubling algorithm*  
Ren-Cang Li |                 |
| 11:50–12:15 |         | *When fluid becomes Brownian: the morphing of Riccati into quadratic equations*  
Giang Nguyen |                 |
| 12:15–12:40 |         | *Analyzing multi-type queues with general customer impatience using Riccati equations*  
Benny Van Houdt |                 |
# Friday, June 22

**Room: 2.15**

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<tbody>
<tr>
<td>11:00–12:40</td>
<td>MS 72</td>
<td><strong>Linear techniques for solving nonlinear equations</strong></td>
<td>Organizer: Vicente F. Candela and Rosa M. Peris Sancho</td>
</tr>
<tr>
<td>11:00–11:25</td>
<td></td>
<td><em>A Gauss-Seidel process in iterative methods for solving nonlinear equations</em></td>
<td>José M. Gutiérrez</td>
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<tr>
<td>11:25–11:50</td>
<td></td>
<td><em>A greedy algorithm for convergence of a fractional blind deconvolution</em></td>
<td>Vicente F. Candela</td>
</tr>
<tr>
<td>11:50–12:15</td>
<td></td>
<td><em>Overview of iterative methods using a variational approach</em></td>
<td>Sonia Busquier Sáez</td>
</tr>
<tr>
<td>12:15–12:40</td>
<td></td>
<td><em>Iterative methods for ill-conditioned problems</em></td>
<td>Rosa M. Peris Sancho</td>
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