Large Sparse Matrix Computations

Wenwei Lin

| 1. | introduction part 1 |
|-----|---|
| 2. | Introduction part 2 |
| 3. | Introduction part 3 |
| 4. | Introduction part 4 |
| 5. | Introduction part 5 |
| 6. | Numerical Methods for Solving Linear Systems part 1 |
| 7. | Numerical Methods for Solving Linear Systems part 2 |
| 8. | Numerical Methods for Solving Linear Systems part 3 |
| 9. | Perron-Frobenius Theorem part 1 |
| 10. | Perron-Frobenius Theorem part 2 |
| 11. | Orthogonalization and Least Square Method part 1 |
| 12. | Orthogonalization and Least Square Method part 2 |
| 13. | Orthogonalization and Least Square Method part 3 |
| 14. | Iterative Methods for Large-sparse Linear System part 1 |
| 15. | Iterative Methods for Large-sparse Linear System part 2 |
| 16. | Iterative Methods for Large-sparse Linear System part 3 |
| 17. | Iterative Methods for Large-sparse Linear System part 4 |
| 18. | Iterative Methods for Large-sparse Linear System part 5 |
| 19. | Conjugate Gradient Method part 1 |
| 20. | Conjugate Gradient Method part 2 |
| 21. | Conjugate Gradient Method part 3 |
| 22. | Conjugate Gradient Method part 4 |
| 23. | Conjugate Gradient Method part 5 |

- 24. Conjugate Gradient Method part 6
- 25. Conjugate Gradient Method part 7
- 26. Conjugate Gradient Method part 8
- 27. Conjugate Gradient Method part 9
- 28. Conjugate Gradient Method part 10
- 29. Eigenvalue Problems part 1
- 30. Eigenvalue Problems part 2
- 31. Eigenvalue Problems part 3
- 32. Eigenvalue Problems part 4
- 33. Eigenvalue Problems part 5
- 34. QR algorithm part 1
- 35. QR algorithm part 2
- 36. QR algorithm part 3
- 37. QR algorithm part 4
- 38. Symmetric Eigenvalue Problems Perturbation Theory part 1
- 39. Symmetric Eigenvalue Problems Perturbation Theory-part 2
- 40. Symmetric Eigenvalue Problems Perturbation Theory-part 3
- 41. Symmetric Eigenvalue Problems Perturbation Theory-part 4
- 42. QR- algorithm for solving symmetric Eigenvalue problem
- 43. Lanczos Method part 1
- 44. Lanczos Method part 2
- 45. Lanczos Method part 3
- 46. Lanczos Method part 4
- 47. Krylov-Schur Method
- 48. Jacobi-Davidson Method part 1

| 49. | Jacobi-Davidson | Method | part | 2 |
|-----|-----------------|--------|------|---|
|-----|-----------------|--------|------|---|

June 15, 2025