

Publications of Rodolphe Sepulchre

1 Books

1. P.-A. Absil, R. Mahony, R. Sepulchre. *Optimization algorithms on matrix manifolds*. Princeton University Press, 2008.
2. R. Sepulchre, M. Jankovic and P.V. Kokotovic. *Constructive Nonlinear Control*. Springer-Verlag, Series in Communications and Control Engineering, 1997.

2 Chapters in books

1. G. Drion, R. Sepulchre, and V. Seutin, *Mitochondrial and Endoplasmic Reticulum induced SK Channel Disregulation as a Potential Origin of the Selective Neurodegeneration in Parkinson's Disease*. To appear in *The Systems Biology of Parkinson's Disease*, Genetics and Systems Biology, Springer, 2011.
2. A. Sarlette, R. Sepulchre, *Synchronization on the circle*, In “The Complexity of Dynamical Systems”, J. Dubbeldam, K. Green, D. Lenstra (eds.), pp. 213-240, Wiley, 2011.
3. P.-A. Absil, R. Mahony, R. Sepulchre *Optimization on manifolds : methods and applications*, Recent Advances in Optimization and its Applications in Engineering, Springer-Verlag, pp. 125-144, 2010.
4. C. Lageman, R. Sepulchre *Optimal data fitting on Lie Groups : a Coset approach*, Recent Advances in Optimization and its Applications in Engineering, Springer-Verlag, pp. 173-182, 2010.
5. M. Journée, F. Bach, P.-A. Absil, R. Sepulchre *Refining Sparse Principal Components* Recent Advances in Optimization and its Applications in Engineering, Springer-Verlag, pp. 165-171, 2010.
6. M. Journée, A. Teschendorff, P.-A. Absil, S. Tavaré, R. Sepulchre *Geometric Optimization Methods for the Analysis of Gene Expression Data*, in “Principal Manifolds for Data Visualization and Dimension Reduction”, Springer Berlin Heidelberg, Volume 58, pp. 271–292 - 2007
7. R. Sepulchre. *Oscillators as systems and synchrony as a design principle*, in “Current trends in nonlinear systems and control, L. Menini, L. Zaccarian, C. T. Abdallah (eds.)” Springer-Verlag, 2005.

8. R. Sepulchre, D. Paley, N. Leonard. *Collective motion and oscillator synchronization*, in “Cooperative control”, V. Kumar, N. Leonard, A. Morse (eds.) Lecture Notes in Control and Information Sciences, 309, Springer-Verlag, London, pp. 189-205, 2004.
9. A. Astolfi, R. Ortega, R. Sepulchre. *Stabilization and disturbance attenuation of nonlinear systems using dissipativity theory*. Control of Complex Systems (eds. K. Aström, P. Albertos, M. Blanke, A. Isidori). Springer-Verlag, London, pp.39-75, 2000.
10. P. Van Dooren, R. Sepulchre. *Shift policies in QR-like algorithms and feedback control of self-similar flows*. Open Problems in Mathematical Systems and Control Theory (eds. V.D. Blondel, E.D. Sontag, M. Vidyasagar, J.C. Willems) in the series : Communications and Control Engineering, Springer Verlag, London, pp. 245-250, 1998.
11. R. Sepulchre, M. Jankovic, P.V. Kokotovic. *Recursive designs and feedback passivation*. in *Systems and Control in the Twenty-First Century*, C. Byrnes, B. Datta, D. Gilliam, C. Martin (eds.), Birkhauser, pp. 313-326, 1996.

3 Journal Papers

1. R. Sepulchre, Th. Devos, F. Jadot, F. Malrait. *Antiwindup Design for Induction Motor Control in the Field Weakening Domain*, IEEE Transactions on Control Systems Technology, 2011.
2. R. Sepulchre, *Consensus on nonlinear spaces*, Annual Reviews in Control, vol. 35, pp. 56-64, 2011.
3. G. Drion, L. Massotte, R. Sepulchre, *How modeling can reconcile apparently discrepant experimental results : the case of pacemaking in dopaminergic neurons* PLoS Computational Biology, 7(5), 1002050, 2011.
4. P. Wieland, R. Sepulchre, F. Allgöwer, *An internal model principle is necessary and sufficient for linear output synchronization* Automatica 47(5) : 1068-1074, 2011.
5. F. Crevecoeur, R. Sepulchre, J.-L. Thonnard, Ph. Lefevre, *Improving the state estimation for optimal control of stochastic processes subject to multiplicative noise*, Automatica, vol. 47, no3, pp. 591-596, 2011
6. G. Meyer, S. Bonnabel, R. Sepulchre *Regression on fixed-rank positive semidefinite matrices : a Riemannian approach*, Journal of Machine Learning Research, 12(Feb) :593-625, 2011.

7. M. Journée, F. Bach, P.-A. Absil, R. Sepulchre *Low-rank optimization on the cone of positive semidefinite matrices*, SIAM Journal on Optimization, 20(5), pp. 2327-2351, May 2010.
8. M. Journée, P. Richtarik, Y. Nesterov, R. Sepulchre *Generalized power method for sparse principal component analysis*, Journal of Machine Learning Research, Volume 11, pp. 517-553, 2010.
9. A. Sarlette, S. Bonnabel, R. Sepulchre *Coordinated motion design on Lie groups*, IEEE Transactions on Automatic Control, vol. 55 nr. 5, pp. 1047-1058, 2010.
10. G. Drion, M. Bonjean, O. Waroux, J. Scuvee-Moreau, J.-F. Liegeois, T. Sejnowski, R. Sepulchre, V. Seutin. *M-type channels selectively control bursting in rat dopaminergic neurons* European Journal of Neuroscience, volume 31, pp. 827-835, 2010.
11. L. Scardovi, R. Sepulchre *Synchronization in networks of identical linear systems*, Automatica, Volume 45, Issue 11, pp. 2557-2562, 2009.
12. S. Bonnabel, R. Sepulchre *Riemannian metric and geometric mean for positive semidefinite matrices of fixed rank*, SIAM Journal of Matrix Analysis and Applications, Volume 31, Number 3, pp. 1055-1070, 2009.
13. F. Jadot, F. Malrait, J. Moreno, R. Sepulchre *Adaptive Regulation of Vector Controlled Induction Motors*, IEEE Control Systems Technology, Volume 17, Number 3, 2009.
14. Ch. Germa, N. Van de Wouw, H. Nijmeijer, R. Sepulchre *Nonlinear Drillstring Dynamics Analysis*, SIAM Journal on Applied Dynamical Systems, Volume 8, Number 2, page 527-553 - 2009.
15. A. Sarlette, R. Sepulchre, N. Leonard *Autonomous rigid body attitude synchronization*, Automatica, Volume 45, Number 2, page 572-577 - 2009.
16. A. Sarlette, R. Sepulchre *Consensus optimization on manifolds*, SIAM J. Control Optim. Volume 48, Issue 1, pp. 56-76, 2009.
17. L. Scardovi, N. E. Leonard, R. Sepulchre, *Stabilization of Three-Dimensional Collective Motion*, Communications in Information and Systems, Brockett Legacy issue, vol. 8, no. 4, pp. 473-500, 2008.
18. R. Ronsse, Ph. Lefèvre, R. Sepulchre *Robotics and neuroscience : a rhythmic interaction*. Neural Networks, Volume 21, Issue 4, 577-583, May 2008.
19. P.-A. Absil, R. Mahony, R. Sepulchre *Continuous-time subspace flows related to the symmetric eigenvalue problem* Pacific Journal of Optimization (PJO), Volume 4, Number 2, 179-194, May 2008.

20. A. Mauroy, R. Sepulchre, *Clustering behaviors in networks of integrate-and-fire oscillators*, Special Issue on Synchronization in Complex networks, Chaos, Volume 18, Issue 3, pp. 037122-037122-8 (2008).
21. R. Ronsse, J.-L. Tonnard, Ph. Lefevre, R. Sepulchre *Control of bimanual rhythmic movements : trading efficiency for robustness depending on the context*, Experimental Brain Research, Volume 187, Number 2, May 2008 , pp. 193-205(13)
22. R. Sepulchre, D. Paley, and N. Leonard, *Stabilization of planar collective motion with limited communication*, IEEE Transactions on Automatic Control, Vol. 53, No 3, pp. 706-719, 2008.
23. D. Paley, N. Leonard, R. Sepulchre, D. Grunbaum, J. K. Parrish *Oscillator models and collective motion : Spatial patterns in the dynamics of engineered and biological networks*, IEEE Control Systems Magazine, Volume 27, Number 4, page 89–105 - 2007
24. R. Sepulchre, D. Paley, and N. Leonard, *Stabilization of planar collective motion with all-to-all communication*, IEEE Transactions on Automatic Control, Volume 52, Number 5, page 811–824 - May 2007.
25. N. Leonard, D. Paley, F. Lekien, R. Sepulchre, D. Fratantoni, R. Davis. *Collective motion, sensor networks, and ocean sampling*, Proceedings of the IEEE, special issue on the emerging technology of networked control systems, Number 95, pp. 48–74 - 2007
26. A. Teschendorff, M. Journée, P.-A. Absil, R. Sepulchre, C. Caldas *Elucidating the Altered Transcriptional Programs in Breast Cancer using Independent Component Analysis*, PLoS Computational Biology, Volume 3, Number 8, pp. 1539–1554 - August 2007
27. G.-B. Stan and R. Sepulchre, *Dissipativity and global analysis of oscillators*, IEEE Transactions on Automatic Control, Volume 52, Number 2, page 256–270 - 2007.
28. R. Ronsse, Ph. Lefèvre, and R. Sepulchre, *Rhythmic Feedback Control of a Blind Planar Juggler* , IEEE Transactions on Robotics, Volume 23, Issue 4, pp. 790 - 802 Aug. 2007.
29. L. Scardovi, A. Sarlette, R. Sepulchre *Synchronization and balancing on the N-torus*, Systems and Control Letters, Volume 56, Number 5, page 335–341 - 2007
30. D.E. Chang and R. Sepulchre, *Time-optimal control of a 3-level quantum system and its generalization*, Dynamics of Continuous, Discrete and Impulsive Systems ? Series B, 14 (4), 575 ? 592, 2007.

31. R. Ronsse, Ph. Lefèvre, and R. Sepulchre, *Sensorless stabilization of bounce juggling*, IEEE Transactions on Robotics, Volume 22, Number 1, page 147-59 - feb 2006.
32. R. Sepulchre and G.-B. Stan, *Feedback mechanisms for global oscillations in Lure systems*, Systems and Control Letters, vol. 54/8, pp. 809–818, 2005.
33. P.-A. Absil, R. Sepulchre, P. Van Dooren, R. Mahony, *Cubically convergent iterations for invariant subspace computation*, SIAM J. Matrix Anal. Appl., vol. 26, No. 1, pp. 70-96, 2004.
34. P.A. Absil, R. Sepulchre. *Continuous dynamical systems that realize discrete optimization on the hypercube*, Systems and Control Letters, Vol. 52 , p.p 297-304, 2004.
35. P.-A. Absil, R. Mahony, R. Sepulchre. *Riemannian geometry of Grassmann manifolds with a view on algorithmic computation*, Acta Appl. Math., Volume 80, Issue 2, pp. 199-220, 2004.
36. R. Sepulchre, M. Arcak, A. Teel. *Trading the stability of finite zeros for global stabilization of nonlinear cascade systems*, IEEE Transactions on Automatic Control, vol.47, no.3, pp. 521-525, 2002.
37. L. Moreau, D. Aeyels, J. Peuteman, R. Sepulchre. *A duality principle for homogeneous vector fields with applications* Systems Control Lett., Volume 47, Number 1, pp. 37-46, 2002.
38. F. Grognaard, R. Sepulchre, G. Bastin. *Improved performance of low-gain designs for bounded control of linear systems*, Automatica, vol. 38, no.11, pp. 1777-1782, 2002.
39. P.A. Absil, R. Mahony, R. Sepulchre, P. Van Dooren. *A Grassmann-Rayleigh quotient iteration for computing invariant subspaces*, SIAM Review, Vol. 44, No. 1, pp. 57-73, 2002.
40. W. Michiels, R. Sepulchre, D. Roose. *Stability of perturbed functional differential equations and stabilization of nonlinear cascades*, SIAM Journal of Control and Optimization, Vol 40(3), pp 661-680, 2001.
41. F. Grognaard, F. Jadot, L. Magni, G. Bastin, R. Sepulchre, V. Wertz. *Robust global state feedback stabilization of cement mills*, IEEE Transactions on Automatic Control, Vol. 46 (4), pp. 618-623, April 2001.
42. J. Peuteman, D. Aeyels, R. Sepulchre. *Boundedness properties for time-varying nonlinear systems*, SIAM Journal of Control and Optimization, Vol. 39 (5), pp. 1408-1422, 2000.

43. W. Aernouts, R. Sepulchre, D. Roose. *Delayed control of axial compressors*, International Journal of Bifurcations and Chaos, Vol. 10, No 5, pp. 1157-1164, 2000.
44. R. Sepulchre. *Slow peaking and Low-Gain Designs for global stabilization of nonlinear systems*, IEEE Transactions on Automatic Control, Vol. 45, No 3, pp. 453-461, 2000.
45. F. Grogard, R. Sepulchre, G. Bastin. *Global stabilization of feedforward systems with exponentially unstable Jacobian linearization*, Systems and Control Letters, vol. 37, no. 2, pp. 107-115, 1999.
46. P.A. Absil, R. Sepulchre, A. Bilge, P. Gerard. *Nonlinear analysis of cardiac rythm fluctuations using DFA method.*, Physica A 272, pp. 235-244, 1999.
47. M. Jankovic, R. Sepulchre, P.V. Kokotovic, *CLF Based designs with robustness to dynamic input uncertainties*, Systems and Control Letters, 37, pp. 45-54, 1999.
48. F. Mazenc, R. Sepulchre, M. Jankovic, *Lyapunov functions for stable cascades and applications to stabilization*, IEEE Transactions on Automatic Control, vol. 44, no 9, pp. 1795-1800, 1999.
49. D. Aeyels, R. Sepulchre, J. Peuteman. *Asymptotic stability conditions for time-variant systems and observability : uniform and non-uniform criteria*, Mathematics of Control, Signals, and Systems, no. 11, pp. 1-27, 1998.
50. R. Sepulchre and P.V. Kokotovic. *Shape signifiers for throttle control of a low-order compressor model*, IEEE Transactions on Automatic Control, vol. 43, no 11, pp. 1643-1648, 1998.
51. L. Magni, R. Sepulchre. *Stability margins of nonlinear receding horizon control via inverse optimality*, Systems and Control Letters, vol. 32, No 4, pp. 241-245, 1997.
52. M. Jankovic, R. Sepulchre, and P.V. Kokotovic. *Global adaptive stabilization of cascade nonlinear systems*, Automatica, vol. 33, no 2, pp. 263-368, 1997.
53. R. Sepulchre, M. Jankovic, and P.V. Kokotovic. *Integrator forwarding : a new recursive nonlinear robust design*, Automatica, vol. 33, no 5, pp. 979-984, 1997.
54. M. Jankovic, R. Sepulchre, and P.V. Kokotovic. *Constructive Lyapunov stabilization of nonlinear cascade systems*, IEEE Transactions on Automatic Control, vol. 41, no 12, pp. 1723-1735, 1996.

55. R. Sepulchre and D. Aeyels. *Homogeneous Liapunov functions and necessary conditions for stabilization*, Journal of Mathematics for Control, Signal and Systems, vol. 9, no 1, pp. 34-58, 1996.
56. R. Sepulchre and D. Aeyels. *Stabilizability does not imply homogeneous stabilizability for controllable systems*. SIAM Journal of Control and Optimization , vol. 34, no 5, pp. 1798-1813, 1996.

4 Conference Papers

1. B. Mishra, G. Meyer, R. Sepulchre, *Low-rank optimization for distance matrix completion*, Proceedings of the 50th IEEE Conference on Decision and Control and European Control Conference, Orlando, Florida, pp. December 2011.
2. A. Mauroy, R. Sepulchre, *Local stability results for the collective behaviors of infinite populations of pulse-coupled oscillators*, Proceedings of the 50th IEEE Conference on Decision and Control and European Control Conference, Orlando, Florida, pp. December 2011.
3. P. Sacré, R. Sepulchre, *Matching an oscillator model to a phase response*, Proceedings of the 50th IEEE Conference on Decision and Control and European Control Conference, Orlando, Florida, pp. December 2011.
4. S. Bonnabel, A. Astolfi, R. Sepulchre, *Contraction and Observer Design on Cones*, Proceedings of the 50th IEEE Conference on Decision and Control and European Control Conference, Orlando, Florida, pp. December 2011.
5. G. Meyer, S. Bonnabel, R. Sepulchre, *Linear regression under fixed-rank constraints : a Riemannian approach* Proceedings of the 28th International Conference on Machine Learning, Bellevue, Washington, July 2011.
6. R. Sepulchre. *Consensus on nonlinear spaces*. Proceedings of the 8th IFAC Symposium on Nonlinear Control Systems, Bologna, September 2010.
7. R. Sepulchre, P.-A. Absil, S. Bonnabel. *Géométrie des matrices positives semi-définies de rang fixé : un peu de théorie et beaucoup d'applications*. Sixième Conférence Internationale Francophone d'Automatique (CIFA 2010), Nancy, France, 2-4 juin 2010

8. L. Trotta, E. Bullinger R. Sepulchre, *Delayed Decision-Making in Bistable Models*, Proceedings of the 49th IEEE Conference on Decision and Control, Atlanta, Georgia, pp.816-821, December 2010.
9. R. Sepulchre, A. Sarlette, P. Rouchon *Consensus in Non-Commutative Spaces*, Proceedings of the 49th IEEE Conference on Decision and Control, Atlanta, Georgia, pp. 6596-6601, December 2010.
10. P. Wieland, R. Sepulchre, F. Allgöwer, *Phase Synchronization through Entrainment by a Consensus Input*, Proceedings of the 49th IEEE Conference on Decision and Control, Atlanta, Georgia, pp. - December 2010.
11. M. Hafner, P. Sacré, L. Symul, R. Sepulchre, H. Koeppel *Multiple feedback loops in circadian cycles : robustness and entrainment as selection criteria*, Proceedings of the Seventh International Workshop on Computational Systems Biology, WCSB 2010, Luxembourg - June 2010.
12. A. Mauroy, J. Hendrickx, A. Megretski, R. Sepulchre, *Global Analysis of Firing Maps*, Proceedings of the 19th International Symposium on Mathematical Theory of Networks and Systems (Budapest, Hungary) - July 2010.
13. S. Bonnabel, G. Meyer, R. Sepulchre, *Adaptive filtering for estimation of a low-rank positive semi-definite matrix*, Proceedings of the 19th International Symposium on Mathematical Theory of Networks and Systems (Budapest, Hungary) - July 2010.
14. S. Bonnabel, R. Sepulchre, *Rank-preserving geometric means of positive semi-definite matrices*, Proceedings of the 19th International Symposium on Mathematical Theory of Networks and Systems (Budapest, Hungary) - July 2010.
15. Ch. Lageman, A. Sarlette, R. Sepulchre, *Synchronization with partial state feedback on $SO(n)$* , Proceedings of the 48th IEEE Conference on Decision and Control, Shanghai, China, pp. 1696-1701- December 2009.
16. D. Efimov, P. Sacré, R. Sepulchre, *Controlling the phase of an oscillator : a phase response curve approach*, Proceedings of the 48th IEEE Conference on Decision and Control, Shanghai, China, pp. 7692-7697- December 2009.
17. A. Sarlette, R. Sepulchre, *Consensus on manifolds*, Proceedings of the 48th IEEE Conference on Decision and Control, Shanghai, China, pp. 5139-5145- December 2009.
18. A. Sarlette, R. Sepulchre, *A PDE viewpoint on basic properties of coordination algorithms with symmetries* , Proceedings of the 48th IEEE

- Conference on Decision and Control, Shanghai, China, pp. 6438-6443-December 2009.
19. G. Meyer, M. Journée, S. Bonnabel, R. Sepulchre, *From subspace learning to distance learning : a geometrical optimization approach*, Proceedings of the IEEE workshop on statistical signal processing (SSP09), Cardiff, UK - September 2009.
 20. A. Sarlette, S. Bonnabel, R. Sepulchre, *Coordination on Lie groups*, Proceedings of the 47th IEEE Conference on Decision and Control, Cancun, Mexico - December 2008.
 21. L. Scardovi, R. Sepulchre, *Synchronization in Networks of Identical Linear Systems*, Proceedings of the 47th IEEE Conference on Decision and Control, Cancun, Mexico - December 2008.
 22. A. Sarlette, S. E.Tuna, V. Blondel, R. Sepulchre, *Global Synchronization on the Circle*, 17th World IFAC Congress, Seoul, Korea - August 2008.
 23. R. G. Sanfelice, A. R. Teel, R. Sepulchre, *A Hybrid Systems Approach to Trajectory Tracking Control for Juggling Systems*, Proceedings of the 46th IEEE Conference on Decision and Control, New- Orleans, pp. 5282–5287 - December 2007.
 24. D. Swain, N. Leonard, I. Couzin, A. Kao, R. Sepulchre *Alternating Spatial Patterns for Coordinated Group Motion*, Proceedings of the 46th IEEE Conference on Decision and Control, New- Orleans, pp. 2925–2931 - December 2007.
 25. L. Scardovi, N. Leonard, R. Sepulchre, *Stabilization of Collective Motion in Three Dimensions : A Consensus Approach*, Proceedings of the 46th IEEE Conference on Decision and Control, New- Orleans, pp. 2931-2936 - December 2007.
 26. D.-E. Chang, R. Sepulchre *Time-Optimal Control of a 3-Level Quantum System and Its Generalization to an N-Level System*, Proceedings of the 26th American Control Conference (ACC 2007), Times Square, New York City, USA, July 11-13, 2007
 27. G.-B. Stan, A. Hamadeh, R. Sepulchre, J. M. Goncalves *Output Synchronization in Networks of Cyclic Biochemical Oscillators*, Proceedings of the 26th American Control Conference (ACC 2007), Times Square, New York City, USA, July 11-13, 2007.
 28. M. Bonjean, Ch. Phillips, T. Dang-Vu, R. Sepulchre, P. Maquet *An in computo investigation of the Landau-Kleffner syndrome*, Conf. Pro-

- ceedings of the IEEE Eng. Med. Biol. Society, Volume 29, Number 1, pp. 2730–2734 - August 2007
29. A. Sarlette, R. Sepulchre, N. Leonard *Autonomous Rigid Body Attitude Synchronization*, Proceedings of the 46th IEEE Conference on Decision and Control, New- Orleans, pp. 2566–2571 - December 2007
 30. S.E. Tuna, R. Sepulchre, *Consensus under General Convexity*, Proceedings of the 46th IEEE Conference on Decision and Control, New-Orleans, pp. 294–299 - December 2007.
 31. D. Paley, N. Leonard, R. Sepulchre, I. Couzin, *Spatial Models of Bistability in Biological Collectives*, Proceedings of the 46th IEEE Conference on Decision and Control, New- Orleans, pp. 4851–4856 - December 2007.
 32. S. E. Tuna, R. Sepulchre, *Quantitative convergence analysis of multi-agent systems*, 7th IFAC Symposium on Nonlinear Control Systems, pp. 236–241 - August 2007.
 33. A. Sarlette, R. Sepulchre, N. Leonard, *Cooperative Attitude Synchronization in Satellite Swarms : A Consensus Approach* 17th IFAC Symposium on Automatic Control in Aerospace, Toulouse, France - June 2007.
 34. M. JournÈe, A. Teschendorff, P.-A. Absil, R. Sepulchre, *Geometric optimization methods for independent component analysis applied on gene expression data*, Proceedings of the IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP 2007), pp. 1413–1416 - April 2007
 35. M. JournÈe, P.-A. Absil, R. Sepulchre, *Gradient-optimization on the orthogonal group for independent component analysis*, Independent Component Analysis and Signal Separation, Volume 4666, pp. 57–64 - September 2007.
 36. L. Scardovi, R. Sepulchre, N. Leonard, *Stabilization Laws for Collective Motions in Three Dimensions* European Control Conference - 2007.
 37. A. Sarlette, R. Sepulchre, N. Leonard, *Discrete-time synchronization on the N-torus* Proceedings 17th International Symposium on Mathematical Theory of Networks and Systems (Kyoto, Japan) - 2006.
 38. R. Ronsse, R. Sepulchre, *Feedback Control of Impact Dynamics : the Bouncing Ball Revisited* Proc. 45th IEEE Conference on Decision and Control - 2006.

39. L. Scardovi, R. Sepulchre, *Collective Optimization Over Average Quantities* Proceedings of the 45th IEEE Conference on Decision and Control, pp. 3369–3374 - 2006.
40. D. Paley, N. Leonard, R. Sepulchre, *Oscillator models and collective motion : Splay state stabilization of self-propelled particles*, in Joint IEEE 44th Conf. on Decision and Control and European Control Conference 2005, Sevilla, Spain, 2005.
41. C. Germain, N. V. de Wouw, R. Sepulchre, and H. Nijmeijer, *Axial stick-slip limit cycling in a drill-string model with delay*, in Proceedings of the 5th Euromech nonlinear dynamics conference, Eindhoven, 2005.
42. D.-E. Chang, R. Ronsse, and R. Sepulchre, *Is bounce juggling easier in a parabolic billiard than in a wedge*, in Proceedings of the 5th Euromech nonlinear dynamics conference, Eindhoven, 2005.
43. M. Gerard and R. Sepulchre, *Rhythmic stabilization of periodic orbits in a wedge*, in Proceedings of the 16th IFAC world Congress, Praha, 2005.
44. R. Ronsse, P. Lefevre, and R. Sepulchre, *Timing feedback control of a rhythmic system*, in Proceedings of the joint 44th IEEE Conference on Decision and Control and European Control Conference 2005, Seville, Spain, 2005.
45. R. Sepulchre, D. Paley, , and N. Leonard, *Graph laplacian and lyapunov design of collective planar motions*, Proceedings of the 2005 International Symposium on Nonlinear Theory and its Applications, Bruges, Belgium, 2005.
46. D. Paley, N. Leonard, R. Sepulchre. *Collective motion : bistability and trajectory tracking*. Proceedings of the 43rd IEEE Conference on Decision and Control, The Bahamas, December 2004.
47. R. Ronsse, Ph. Lefèvre, R. Sepulchre *Open-loop stabilization of 2D impact juggling* . Proceedings of the 6th IFAC Symposium on Nonlinear Control Systems, Stuttgart, Germany, pp.1157-1162, September 2004.
48. M. Gérard, R. Sepulchre. *Stabilization through weak and occasional interactions : a billiard benchmark* . Proceedings of the 6th IFAC Symposium on Nonlinear Control Systems, Stuttgart, Germany, pp. 73-78, September 2004.
49. G-B. Stan, R. Sepulchre. *Dissipativity and global analysis of limit cycles in networks of oscillators*. Proceedings of the 16th Symposium on Mathematical Theory of Networks and Systems, Leuven, Belgium, July 2004 (no 292, 6 pages).

50. R. Sepulchre, D. Paley, N. Leonard. *Collective motion and oscillator synchronization*. Proceedings of the 16th Symposium on Mathematical Theory of Networks and Systems, Leuven, Belgium, July 2004 (no 308, 6 pages).
51. J. Jordan, P.-A. Absil, R. Sepulchre. *Generalized shifted inverse iterations on Grassmann manifolds*. Proceedings of the 16th International Symposium on Mathematical Theory of Networks and Systems, Leuven, Belgium, July 2004 (6 pages).
52. R. Sepulchre, M. Gerard. *Stabilization of periodic orbits in a wedge billiard*. Proceedings of the 42nd IEEE Conference on Decision and Control, Hawaii, USA, December 2003.
53. G-B. Stan, R. Sepulchre. *Dissipativity characterization of a class of oscillators and networks of oscillators* . Proceedings of the 42nd IEEE Conference on Decision and Control, Hawaii, USA, December 2003.
54. P.-A. Absil, R. Sepulchre, P. Van Dooren and R. Mahony. *A Newton algorithm for invariant subspace computation with large basins of attraction* . Proceedings of the 42nd IEEE Conference on Decision and Control, Hawaii, USA, pp. 2352-2357, December 2003
55. W.Michiels, R. Sepulchre, D. Roose, L. Moreau, *A perturbation approach to the stabilization of nonlinear cascade systems with time-delay*, Proceedings of the 41th IEEE Conference on Decision and Control, Las Vegas, pp. 1898-1903, December 2002.
56. P-A. Absil, R. Sepulchre, *The continuous-time Rayleigh quotient flow on the Grassmann manifold*, Proceedings of the 15th Symposium on Mathematical Theory of Networks and Systems, August 2002, Notre-Dame (USA) (6 pages).
57. R. Sepulchre, M. Arcak, A. Teel. *Trading the stability of finite zeros for global stabilization of nonlinear cascades*, Proceedings of the 40th IEEE Conference on Decision and Control, Orlando, Florida, pp. 3025-3030, December 2001.
58. F. Grognaard, R. Sepulchre. *Global analysis of a continuous-time flow which computes time-optimal switchings*, Proceedings of the 40th IEEE Conference on Decision and Control, Orlando, Florida, pp. 3826-3831, December 2001.
59. F . Grognaard, R. Sepulchre, J. De Don., *Dynamical systems that compute time-optimal switchings*, Proceedings of the 5th IFAC Symposium on Nonlinear Control Systems, St Petersburg, Russia, pp. 1270-1275, July 2001.

60. P-A. Absil, R. Sepulchre, *A hybrid control scheme for swing-up acrobatics*, Proceedings of the 5th European Control Conference, Porto, Portugal, pp.2860-2864, September 2001.
61. R. Sepulchre, M. GÉRard, B. Marchand, D. Prieels, B. Bauvir. *Pencil Beam Scanning : a dynamical approach to proton therapy*, Proceedings of the IEEE Symposium on Bioinformatics and Biomedical engineering, Arlington, pp. 370-375 , November 2000.
62. P-A. Absil, R. Mahony, R. Sepulchre, P. Van Dooren, *A Grassmann-Rayleigh Quotient Iteration for computing invariant subspaces*, Proceedings of the 39th IEEE Conference on Decision and Control, Sydney, Australia, December 2000.
63. F. Grogard, R. Sepulchre, G. Bastin, *Control of linear systems with affine constraints : a gain-scheduling approach*, Proceedings of the 39th IEEE Conference on Decision and Control, Sydney, pp. 4785-4790, December 2000.
64. P-A. Absil, R. Sepulchre. *Gradient systems for optimization on the hypercube*, Proceedings of the 14th Symposium on Mathematical Theory of Networks and Systems, June 2000, Perpignan (6 pages).
65. F. Grogard, R. Sepulchre, G. Bastin. *Improved performance for low-gain control of linear systems with input saturation*, Proceedings of the 14th Symposium on Mathematical Theory of Networks and Systems, June 2000, Perpignan (6 pages).
66. D. Aeyels, L. Moreau, J. Peuteman, R. Sepulchre. *Homogeneous systems : stability, boundedness and duality*, Proceedings of the 14th Symposium on Mathematical Theory of Networks and Systems, June 2000, Perpignan (6 pages).
67. W. Michiels, R. Sepulchre, D. Roose. *Robustness of nonlinear delay equations with respect to bounded input perturbations*, Proceedings of the 14th Symposium on Mathematical Theory of Networks and Systems, June 2000, Perpignan (6 pages).
68. F. Grogard, R. Sepulchre, G. Bastin. *Slow control for global stabilization of feedforward systems with unstable Jacobian linearization*, Proceedings of the 37th IEEE Conference on Decision and Control, Tampa, Florida, pp. 1452-1457, 1998.
69. P.A. Absil, R. Sepulchre, A. Bilge, R. Poirrier. *Sleep apnea syndrome diagnosis by analysis of the cardiac interbeat RR time series*, Proc. International Workshop on Advanced Black-Box Techniques for Nonlinear Modeling, Leuven, Belgium, pp. 133-137, July 1998.

70. F. Grognard, R. Sepulchre, L. Praly, G. Bastin. *Nested linear low-gain designs for semiglobal stabilization of feedforward systems*, Proceedings of the 4th IFAC Symposium on Nonlinear Control Systems, Enschede, The Netherlands, pp. 829-834, July 1998.
71. R. Sepulchre, M. Arcak, *On the stabilization of nonlinear cascade systems with right-half plane zeros*. Proceedings of the 4th IFAC Symposium on Nonlinear Control Systems, Enschede, The Netherlands, pp. 624-630, July 1998.
72. R. Sepulchre. *Slow peaking and global stabilization of nonlinear systems*. Proceedings of the 36th IEEE Conference on Decision and Control, pp. 3491-3496, 1997.
73. F. Mazenc, R. Sepulchre, M. Jankovic. *Lyapunov functions for stable cascades and applications to global stabilization*, Proceedings of the 36th IEEE Conference on Decision and Control, pp. 2843-2846, 1997.
74. C. Barbu, R. Sepulchre, P.V. Kokotovic, W. Lin. *Global asymptotic stabilization of the ball-and-beam model*. Proc. of the 36th IEEE Conference on Decision and Control, pp. 2351-2355, 1997.
75. M. Larsen, B. Coller, R. Sepulchre, P. Kokotovic. *Dynamic control of Axial Compressors*, Proceedings of the 1997 IEEE International Conference on Control Applications, Hartford, CT, USA, 5-7 Oct. 1997). New York, NY, USA : IEEE, pp. 663-70, 1997.
76. R. Sepulchre and P.V. Kokotovic. *Interlaced systems and recursive designs for global stabilization*. Proc. of the 4th European Control Conference, 1997, Brussels, WE-E-A (6 pages).
77. R. Sepulchre, M. Jankovic, and P.V. Kokotovic. *Integrator forwarding : a new recursive nonlinear robust design*. Proceedings of the 13th IFAC World Congress, San Francisco, California, pp. 85-90, 1996.
78. R. Sepulchre, D. Aeyels, and J.L. Willems. *From the Nyquist criterion to the circle criterion*. Proceedings of the 13th IFAC World Congress, San Francisco, California, pp. 1-6, 1996.
79. M. Jankovic, R. Sepulchre, and P.V. Kokotovic. *Global adaptive stabilization of cascade nonlinear systems*. Proceedings of the 13th IFAC World Congress, San Francisco, California, pp. 311-316, 1996.
80. M. Jankovic, R. Sepulchre, and P.V. Kokotovic. *Global stabilization of an enlarged class of cascade nonlinear systems*. Proceedings of the 34th IEEE Conference on Decision and Control, New-Orleans, December 95 (6 pages).

81. R. Sepulchre and P.V. Kokotovic. *Shape signifiers for the control of surge and stall compressor instabilities*. Presented at MTNS conference, St-Louis, June 1996.
82. R. Sepulchre and M. Jankovic. *Stabilization of upper-triangular homogeneous systems*. Presented at MTNS conference, St-Louis, 1996.
83. R. Sepulchre and D. Aeyels. *Adding an integrator to a non stabilizable planar homogeneous system*. Proceedings of the 3rd IFAC Symposium on Nonlinear Control Systems, Tahoe city, pp. 170-175, 1995.
84. D. Aeyels and R. Sepulchre. *Stabilization of time-variant control systems*. Proc. of the 3rd European Control Conference, Roma, pp. 1860-1862, 1995.
85. R. Sepulchre and D. Aeyels. *Further obstructions to continuous feedback stabilization*, Proceedings of the 33rd IEEE Conference on Decision and Control, Orlando, pp. 3277-3282, 1994.
86. D. Aeyels, R. Sepulchre, I. Mareels. *On the stabilization of planar homogeneous systems*, invited paper, Proceedings of the 11th Symposium on Mathematical Theory of Networks and Systems, Regensburg, August 93, pp. 27-30.
87. R. Sepulchre, V. Wertz, G. Campion. *Some remarks about periodic feedback stabilization*. Proceedings of the 2nd IFAC Symposium on Nonlinear Control Systems, Bordeaux, France, pp. 418-423, 1992.
88. B. d'Andréa, Ph. Martin, R. Sepulchre. *Full linearization of a class of mechanical systems via dynamic feedback*. Proceedings of the 10th Symposium on Mathematical Theory of Networks and Systems, June 1991, Japan (6 pages).