

# List of Publications

**Tamar Flash (Yashin)**

(latest update Sept. 2009)

## Journal Articles

- J1. Blum, B., Yashin, T., Benary, V., Israeli, J. and Davidovich, A. (1977) Responses of the leptomeningeal microcirculation to hypothalamic stimulation. *Microvascular Res.* **13**: 283-296.
- J2. Hollerbach, J.M. and Flash, T. (1982) Dynamic interactions between limb segments during planar arm movements. *Biol. Cybernetics* **44**: 67-77.
- J3. Flash, T. and Hogan, N. (1985) The coordination of arm movements: an experimentally confirmed mathematical model. *J. Neurosci.* **7**: 1688-1703.
- J4. Hogan, N. and Flash, T. (1987) Moving gracefully: quantitative theories of motor control. *Trends in Neurosci.* **10**: 170-174.
- J5. Edelman, S. and Flash, T. (1987) A model of handwriting. *Biol. Cybernetics* **57**: 25-36.
- J6. Flash, T. (1987) The control of hand equilibrium trajectories in multi-joint arm movements. *Biol. Cybernetics* **57**: 257-274.
- J7. Flash, T. and Potts, R.B. (1988) Discrete trajectory planning. *Int. J. of Robotic Res.* **7**: 48-57.
- J8. Flash, T. (1989) The generation of reaching movements: the feasibility and implications of the equilibrium trajectory hypothesis. *Brain Behavior and Evolution* **33**: 63-68.
- J9. Flash, T. (1989) Speed insensitive and speed sensitive strategies in multi-joint movements. *Brain and Behavioral Sciences* **12**: 215-216.
- J10. Edan Y., Flash, T., Shmulevich, I., Sarig, Y. and Peiper, U.M. (1990). An algorithm defining the motions of a citrus picking robot. *J. of Agricultural Engineering* **46**: 259-273.
- J11. Flash, T. and Mussa-Ivaldi, F. (1990) Human arm stiffness characteristics during the maintenance of posture, *Exp. Brain Res.* **82**: 315-327.
- J12. Edelman S., Ullman S. and T. Flash (1990) Reading cursive handwriting by alignment of letter prototypes. *Int. J. of Computer Vision* **5**: 303-331.
- J13. Edan Y., Flash, T., Peiper, U., Shmulevich, I. and Sarig, Y. (1991) Near-minimum time task planning algorithm for fruit-picking robots. *IEEE Trans. on Robotics and Automation* **7**: 48-56.

- J14. Cohen M. and Flash, T. (1991) Learning impedance parameters for robot control using an associative search network. *IEEE Trans. on Robotics and Automation* **7**: 382-390.
- J15. Flash T. and Henis, E. (1991) Arm trajectory modification during reaching towards visual targets. *Journal of Cognitive Neuroscience* **3**: 220-230.
- J16. Flash T., Henis, E., Inzelberg, R. and Korczyn, A.D. (1992) Timing and sequencing of arm trajectories: normal and abnormal motor behavior. *Human Movement Science* **11**: 83-100.
- J17. Flash T., Inzelberg, R., Korczyn, A.D. and Schechtman, E. (1992) Kinematic properties of upper limb trajectories in Parkinson's disease. *Exp. Neurology* **118**: 215-226.
- J18. Jordan, M.I., Flash, T. and Arnon, Y. (1994) Learning arm trajectories from spatial deviations *Journal of Cognitive Neuroscience* **6**: 359-376.
- J19. Viviani P. and Flash, T. (1995) Minimum-jerk, two-thirds power law and isochrony: converging approaches to the study of movement planning, *Journal of Experimental Psychology: Perception and Performance* **21**: 32-53.
- J20. Inzelberg R., Flash T., Schechtman E. and Korczyn, A.D. (1995) Kinematic properties of upper limb trajectories in idiopathic torsion dystonia. *Journal of Neurology, Neurosurgery and Psychiatry* **58**: 312-319.
- J21. Henis E. and Flash T. (1995) Mechanisms underlying the generation of averaged modified trajectories. *Biological Cybernetics* **72**: 407-419.
- J22. Edan Y., Miles, G.E., Flash, T., Wolf, I., Grainspan, J., Peiper, U.M. (1996) A Robotic Melon Harvester, *Service Robot* **2**(1): 10-15.
- J23. Gutfreund, Y., Flash, T., Yarom, Y., Graziano F., Segev I. and Hochner B. (1996), Organization of octopus arm movements in three-dimensional space: a model for the control of flexible arms. *J. Neurosci.* **16**: 7297-7307.
- J24. Gielen A.C.A.M., Vrijenhoek, E.J., Flash, T. and Neggers, S.F.W. (1997) Arm position constraints during pointing and reaching. *Journal of Neurophysiology* **78**: 660-673.
- J25. Kamon Y., Flash, T. and Edelman, E. (1998) Learning to grasp using visual information. *IEEE Transactions on Systems Man and Cybernetics* **28**: 266-276.
- J26. Gutfreund, Y., Flash, T., Fiorito, G. and Hochner, B. (1998) Patterns of arm muscle activation involved in octopus reaching movements. *J. Neurosci.* **18**: 5976-5987.
- J27. Plotnik, M., Flash, T., Inzelberg, R., Schechtman E. and Korczyn, A.D. (1998) Motor switching abilities in Parkinson's disease and in the elderly: temporal aspects. *Journal of Neurology, Neurosurgery and Psychiatry* **65**: 328-337.
- J28. Gat-Falick T. and Flash, T. (1999) The superposition strategy for arm trajectory modification in robotic manipulators, *IEEE Transactions on Systems Man and Cybernetics* **29**: 83-95.

J29. Handzel A.A. and Flash T. (1999) Geometric Methods in The Study of Human Motor Control, *Cognitive Studies* **6**: 1-13.

J30. Edan, Y., Rogozin, V., Flash, T. and Miles, G.E. (2000) Robotic Melon Harvesting, *IEEE Trans. on Robotics and Automation* **16**: 831-835.

J31. Rogozin, V., Edan, Y. and Flash, T. (2001) A real time trajectory modification algorithm. *Robotica* **19**: 831-835.

J32. Inzelberg, R., Plotnik, M., Flash, T., Schechtman, E., Sahar, I., Korczyn, A.D. (2001), Mental and motor switching in Parkinson's Disease. *Journal of Motor Behavior* **33**: 377-388.

J33. Sumbre, G., Gutfreund, Y., Fiorito G., Flash, T. and Hochner, B. (2001), Control of Octopus arm extension by a peripheral motor system, *Science* **293**: 1845-1848.

J34. Flash T., Sejnowski, T.J., (2001) Computational approaches to motor control. *Current Opinion in Neurobiology* **11**: 655-662.

J35. Vetter, P., Flash, T. and Wolpert DM (2002) Planning movement in a simple redundant task, *Current Biology* **12**: 488-491.

J36. Yekutieli, Y., Sumbre, G., Flash, T. and Hochner, B. (2002) How to move with no rigid skeleton? The Octopus has the answer. *Biologist* **49**: 250-254.

J37. Richardson M.J.E., Flash, T. (2002) Comparing smooth arm movements with the two-thirds power law and the related segmented-control hypothesis. *J. of Neurosci.* **22**: 8201-8211.

J38. Korman, M., Raz, N., Flash, T. and Karni, A. (2003) Multiple Shifts in the representation of a motor sequence during the acquisition of skilled performance. *PNAS* **100**(21): 12492-12497.

J39. Sosnik, R., Hauptmann, B., Karni, A., Flash, T. (2004) When practice leads to co-articulation: the evolution of geometrically defined movement primitives. *Exp Brain Res.* **156**(4): 422-438.

J40. Hicheur, H., Vieilledent, S., Richardson, M.J.E., Flash, T. and Berthoz, A. (2005) Velocity and curvature in human locomotion along complex curved paths: a comparison with hand movements. *Experimental Brain Research* **162**(2): 145-154.

J41. Sumbre, G., Fiorito, G., Flash, T. (2005) Motor control of flexible octopus arms. *Nature* **433** (7026): 595-596.

J42. Yekutieli, Y., Sagiv-Zohar, R., Aharonov, R., Engel, Y., Hochner, B. and Flash, T. (2005) Dynamic model of the octopus arm. I. Biomechanics of the octopus reaching movement. *Journal of Neurophysiology* **94**(2): 1443-1458.

J43. Yekutieli, Y., Sagiv-Zohar, R., Hochner, B., Flash, T. (2005). Dynamic model of the octopus arm. II. Control of reaching movements. *Journal of Neurophysiology* **94**(2): 1459-1468.

- J44. Korman, M., Flash, T. and Karni, A. (2005) Resistance to interference and the emergence of delayed gains in newly acquired procedural memories: Synaptic and system consolidation? *Behavioral and Brain Sciences* **28**(1): 74.
- J45. Flash, T. and Hochner, B. (2005) Motor primitives in vertebrates and invertebrates. *Current Opinion in Neurobiology* **15**(6): 660-666.
- J46. Liebermann, D.G., Biess, A., Friedman, J., Gielen, C.C.A.M. and Flash T. (2006) Intrinsic joint kinematic planning I: reassessing Listing's law constraint in the control of three dimensional arm movements. *Exp. Brain Res.* **171**(2): 139-154.
- J47. Liebermann, D.G., Biess, A., Gielen, C.C.A.M. and Flash, T. (2006). Intrinsic joint kinematic planning II: Hand-path predictions based on a Listing's plane constraint. *Experimental Brain Research* **171**(2): 155-173.
- J48. Sumbre, G., Fiorito, G., Flash, T. and Hochner, B. (2006) Octopuses use a human-like strategy to control precise point-to-point arm movements. *Current Biology* **16**(8): 767-772.
- J49. Gutfreund Y, Matzner H, Flash T, Hochner, B. (2006). Patterns of motor activity in the isolated nerve cord of the octopus arm. *Biological Bulletin* **211**(3): 212-222.
- J50. Levit-Binnun, N., Schechtman, E. and Flash, T. (2006) On the similarities between the perception and production of elliptical trajectories *Experimental Brain Research* **172**(4): 533-555.
- J51. Israel, I., Siegler, I., Rivaud-Pechoux, S., Gaymard, B., Leboucher, P., Ehrette, M., Berthoz, A. Pierrot-Deseilligny, C., Flash, T. (2006). Reproduction of self-rotation duration. *Neuroscience Letters* **402**(3): 244-248.
- J52. Biess, A., Nagurka, M. and Flash, T. (2006) Simulating discrete and rhythmic multi-joints human arm movements by optimization of non-linear performance indices. *Biological Cybernetics* **95**(1) 31-53.
- J53. Gutfreund Y, Matzner H, Flash T, Hochner, B. (2006) Patterns of motor activity in the isolated nerve cord of the octopus arm. *Biological Bulletin*, **211**(3): 212-222.
- J54. Friedman, J. and Flash, T. (2007) Task-dependent selection of grasp kinematics and stiffness in human object manipulation. *Cortex* **43**(3): 444-460.
- J55. Sosnik, R., Hauptmann, B., Karni., A. and Flash, T. (2007) The acquisition and implementation of the smoothness maximization motion strategy is dependent on spatial accuracy. *Experimental Brain Research* **176**(2) 311-331.
- J56. Yekutieli Y, Mitelman R, Hochner B and Flash, T. (2007) Analyzing octopus movements using three-dimensional reconstruction *J. of Neurophysiol.* **98**(3): 1775-1790.
- J57. Flash T, Handzel A.A. (2007) Affine differential geometry analysis of human arm movements. *Biological Cybernetics* **96** (6): 577-601.

- J58. Biess, A., Liebermann, DG., Flash, T. (2007) A computational model for redundant human three-dimensional pointing movements: Integration of independent spatial and temporal motor plans simplifies movement dynamics. *J. of Neurosci.* **27**(48): 13045-13064.
- J59. Dayan, E., Casile, A., Levit-Binnun, N., Hendler, T., Giese, M., (2007) Neural representations of kinematic laws of motion: Evidence for action-perception coupling. *Proc. Nat. Academy Sci.* **104** (51): 20582-20587.
- J60. Berman S, Liebermann DG, Flash T. (2008) Application of motor algebra to the analysis of human arm movements. *Robotica*, **26** (part 4): 435-451.
- J61. Trojano L, Grossi D., Flash T., (2009) Cognitive neuroscience of drawing: Contributions of neuropsychological, experimental and neurofunctional studies. *Cortex*, **45**(3): 269-277.
- J62. Zelman I, Galun M, Akselrod-Ballin A, Yekutieli Y, Hochner B, Flash T. (2009) Nearly automatic motion capture system for tracking octopus arm movements in 3D space. *Journal of Neuroscience Methods*, **182**(1): 97-09.
- J63. Friedman J, Flash T. (2009) Trajectory of the index finger during grasping. *Experimental Brain Research*, **196**(4): 497-509.
- J64. Tankus A, Yeshurun Y, Flash T, Fried I. (2009) Encoding of speed and direction of movement in the human supplementary motor area. *Journal of Neurosurgery*, **110**(6): 1304-1316.
- J65. Polyakov F, Stark E, Drori R, Abeles M. Flash T. (2009) Parabolic movement primitives and cortical states: merging optimality with geometric invariance. *Biological Cybernetics*, **100**(2): 159-184.
- J66. Pollick FE, Maoz U, Handzel AA, Giblin PJ, Sapiro G, Flash T. (2009) Three-dimensional arm movements at constant equi-affine speed. *Cortex*, **45**(3): 325-339.
- J67. Hauptmann B, Sosnik R, Smikt O, Okon E, Manor D, Kushnir T, Flash T, Karni A (2009) Title: A new method to record and control for 2D-movement kinematics during functional magnetic resonance imaging (fMRI). *Cortex*, **45**(3): 407-417.
- J68. Barliya A, Omlor L, Giese MA, Flash, T. (2009) An analytical formulation of the law of intersegmental coordination during human locomotion. *Experimental Brain Research*, **193**(3): 371-385.
- J69. Noy L, Rumiati RI, Flash T. (2009) Simple movement imitation: Are kinematic features sufficient to map perceptions into actions? *Brain and Cognition*, **69**(2): 360-368.
- J70. Maoz U, Berthoz A, Flash T. (2009) Complex Unconstrained Three-Dimensional Hand Movement and Constant Equi-Affine Speed. *Journal of Neurophysiology*, **101**(2): 1002-1015.

J71. Polyakov P, Drori R, Ben-Shaul Y, Abeles M, and Flash T., (2009) A Compact Representation of Drawing Movements with Sequences of Parabolic Primitives *PLoS Comput Biol.* July; **5**(7). published online.

J72. Bennequin D, Fuchs R, Berthoz A, and Flash T. (2009) Movement Timing and Invariance Arise from Several Geometries. *PLoS Comput Biol.* July; **5**(7). Published online.

### **Book reviews**

B1. Flash, T. (1997). Motor learning. Review of the book: The acquisition of motor behavior in vertebrates. Bloedel, J.R., Ebner, T.J., and Wise, S.P. Eds. MIT Press. *Science* **275**: 1612-1613.

### **Chapters in Books**

C1. Hogan, N., Bizzi, E., Mussa-Ivaldi, F. and Flash, T. (1987) Controlling multi-joint motor behavior. In: Pandolf, R.B. (Ed.), *Exercise and Sport Sciences Reviews* **15**: 159-190, Macmillan Publ. Company, New York.

C2. Inzelberg, R., Flash, T. and Korczyn, A.D. (1990) Kinematic properties of upper limb trajectories in Parkinson's Disease and idiopathic torsion dystonia. In: *Parkinson's Disease: Anatomy, pathology and therapy. Advances in Neurology* Vol. **55**, Eds. M.B. Steifler, A.D. Korczyn, E. Melamed and M.B.H. Youdim, Raven Press, pp. 183-189.

C3. Flash, T., (1990). The organization of human arm trajectory control. In: *Multiple muscle systems: Biomechanics and movement organization*. Eds. J. Winters and S. Woo, Springer-Verlag, pp. 282-301.

C4. Benady M., Flash, T. and Gershon, D. (1990) Robot learning of contact tasks. In: *Proc. of the IFIP TC5/WG5.3 Working Conference on Robots Assembly*, Jerusalem, Israel. Eds. G. Halevi, R. Weill and I. Yudilevich, North-Holland, Amsterdam, 147-159.

C5. Flash T., Henis, E., Inzelberg, R. and Korczyn, A.D. (1992) Timing and sequencing of arm trajectories: normal and abnormal motor behavior. *Sequencing and timing of human movement*, A.J.W.M.Thomassen D.A. Rosenbaum and P.C.W. Van Wieringen, Eds. Amsterdam: North-Holland, pp. 83-100.

C6. Henis, E. and Flash T. (1992) A computational mechanism to account for averaged modified hand trajectories. *Advances in neural information processing systems* **4** Eds. J.E. Moody, S.J. Hanson and R.P. Lippman, Morgan Kaufmann Publ., pp. 619-626.

C7. Flash, T., Inzelberg, R. and Korczyn, A.D. (1992). Quantitative methods for the assessment of motor performance in Parkinson's disease. In: *Methodological Problems of Clinical Trials in Parkinson's Disease*. Ed. C.F. Rose, Smith-Gordon, London, pp. 87-106.

- C8. Inzelberg, R., Flash, T. and Korczyn, A.D. (1995). Kinematic analysis of complex movements in Parkinson's disease. In: *Instrumental methods and scoring in extrapyramidal disorders*. Eds. H. Przuntek, P.H. Kraus, P. Klotz and A.D. Korczyn, Springer-Verlag.
- C9. Plotnik, M., Flash, T., Inzelberg, R., Schechtman, E. and Korczyn, A.D. (1995). Motor switching abilities in Parkinson's disease, In: *Dementia in Parkinson's Disease*. Ed. Amos D. Korczyn, Monduzzi Editore, Bologna, Italy, pp. 273-282.
- C10. Handzel, A. and Flash, T. (1995). The geometry of eye rotations and Listing's law. Proceedings of NIPS95. *Advances in Neural Information Processing* **8** Eds. D.S. Touretzky, M.S. Mozer, M.E. Hasselmo, MIT Press, pp. 117-123.
- C11. Flash, T. and Hogan, N. (1995) Optimization principles in motor control, *The Handbook of Brain Theory and Neural Networks*, Ed. M.A. Arbib, MIT Press, Cambridge, MA. pp. 682-685.
- C12. Inzelberg, R., Plotnik, M., Flash, T., Schechtman, E. and Korczyn, A.D. (1996). Switching abilities in Parkinson's disease. *Advances in Neurology* **69** Ed. R. Battistin, Raven Press, New-York, 361-369.
- C13. Flash, T., Gurevich, I. and Henis, E. (1996). Characterizing and modeling human arm movements: Insights Into Motor Organization. In: *Advances in Processing and Pattern Analysis of Biological Signals*. Eds. I. Gat and G. Inbar, Plenum Publ. Co., New-York. pp. 391-412.
- C14. Gielen, C.C.A.M., Vrijenhoek, E.J. and Flash, T. (1996) Principles for the control of kinematically redundant limbs. In: *Three-Dimensional Kinematic Principles of Eye-, Head-, and Limb Movements*. Eds. M. Fetter, H. Misslisch and D. Tweed, Harwood Academic Publishers, Chur, Switzerland.
- C15. Flash, T. and Gurevich I., (1997). Arm trajectory generation and stiffness control during motor adaptation to external loads. In: *Self-Organization, Computational Maps and Motor Control*. Eds. P.G. Morasso and V. Sanguinetti, Elsevier Publ. pp. 423-482.
- C16. Inzelberg, R., Plotnik, M., Flash, T., Schechtman, E. and Korczyn, A.D. (1996). Switching abilities in Parkinson's disease. *Advances in Neurology* **69** Ed. R. Battistin, Raven Press, New-York, 361-369.
- C17. Flash, T., Gurevich, I. and Henis, E. (1996). Characterizing and modeling human arm movements: Insights Into Motor Organization. In: *Advances in Processing and Pattern Analysis of Biological Signals*. Eds. I. Gat and G. Inbar, Plenum Publ. Co., New-York. pp. 391-412.
- C18. Gielen, C.C.A.M., Vrijenhoek, E.J. and Flash, T. (1996) Principles for the control of kinematically redundant limbs. In: *Three-Dimensional Kinematic Principles of Eye-, Head-, and Limb Movements*. Eds. M. Fetter, H. Misslisch and D. Tweed, Harwood Academic Publishers, Chur, Switzerland.
- C19. Flash, T. and Gurevich I., (1997). Arm trajectory generation and stiffness control during motor adaptation to external loads. In: *Self-Organization, Computational Maps and Motor Control*. Eds. P.G. Morasso and V. Sanguinetti, Elsevier Publ. pp. 423-482.

C20. Flash, T. Richardson, M.E., Handzel, A.A. Liebermann, D.G. (2002). Computational Models and Geometric Approaches in Arm Trajectory Control Studies In: *Progress in Motor Control III: From Basic Science to Applications* Eds. M.L. Latash and M.F. Levin, Human Kinetics: Champaign, IL.

C21. Flash, T., Maoz, U. and Polyakov, F. (2008) Arm Trajectory Formation, in Binder, M.D., Hirokawa, N., Windhorst, U. and Hirsch, M.C. (Eds.), *Encyclopedia of Neuroscience*, Springer, August 2008.

C22. Sosnik, R., Polyakov, F. and Flash, T. (2008) Motor learning and prediction: sequences, *New Encyclopedia of Neuroscience*, Elsevier.

C23. Yekutieli, Y., Flash, T. and Hochner, B. (2008) Biomechanics; hydroskeletal. *New Encyclopedia of Neuroscience*. Elsevier.

### Conference Proceedings

P1. Benary, V., Blum B., Yashin-Flash, T. (1983) Local blood flow, evaluation of methods of measurement. In: *Measurements of blood flow and local tissue energy production by thermal methods, evaluation of methodology* Int. Symposium Jerusalem 1982, XII European conference on microcirculation. Eds. W. Muller-Scaunberg, H. Benzing, E. Betz, B. Blum. Georg Thieme Verlag, pp. 100-106.

P2. Flash, T. (1985) Artificial and natural intelligence in the control of motion. *Proc. of the Seventh Israeli Convention on CAD/CAM and Robotics*. 12.5.1-12.5.2.

P3. Flash T. and Potts, R.B. (1987) Discrete Trajectory planning. *Proc. of the Ninth Israeli Convention on CAD/CAM and Robotics*. 2.1.4.1-2.1.4.6.

P4. Flash, T. (1988) Models of human arm trajectory control. *Proc. of the IEEE Eng. in Medicine and Biology*, 10<sup>th</sup> Ann. Int. Conference, New-Orleans. **10**: 631-632.

P5. Edan Y., Flash, T. Shmulevich, I., Sarig, Y. and Peiper, U.M. (1988) Determination of an algorithm defining the motions of a citrus picking robot, *International Conference on Agricultural Engineering*, Paris, 1988.

P6. Flash, T. (1989) The hierarchical organization of human arm trajectory control. *Proc. IEEE Int. Conference of Control and its Applications*. Jerusalem, April, 1989. RP-3-3, pp. 1-6.

P7. Flash, T. and Cohen, M. (1989) Learning and control of arm impedance. *Proc. of the IEEE Eng. in Medicine and Biology*, 11<sup>th</sup> Ann. Int. Conference, Seattle, **11**: 900-901.

P8. Benady, M., Flash, T. and Gershon, D. (1989) Robot learning of contact tasks. *Proc. The Int. Conference of CAD/CAM and AMT in Israel*. F-3-2 pp. 1-6.

P9. Flash, T. (1991) Biological models in Robotics. *Proc. Second France Israel Symposium on Robotics: Advances in Nonmanufacturing Robotics*. pp. 5.15-5.26.

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P14. Kamon, Y., Flash, T. and Edelman, S. (1994) Learning to grasp using visual information, CS-TR, 94-04, Weizmann Institute of Science.

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P17. Handzel, A. and Flash, T. (1995) The geometry of eye rotations and Listing's law. *Proceedings of NIPS95*. Eds. D.S. Touretzky, M.S. Mozer, M.E. Hasselmo, MIT Press, pp. 117-123.

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P19. Handzel A.A. and Flash T. Binocular Motor Coordinate Systems, *Proceedings of GIMO-98: Workshop on Binocular Coordination of Eye Movements*, Trieste 24-26 June 1998, (1998).

P20. Flash, T., Richardson, M.J.E and Handzel, A.A. The control of motion: from biological to robotic systems. *MMAR2000*, Miedezroje, Poland, Aug 27-30, (2000).

P21. Richardson, M.J.E. and Flash T. On the emulation of natural movements by humanoid robots. *Proceedings of Humanoids 2000*, Cambridge Sep 7-10, (2000).

P22. Handzel A.A. and Flash T. Affine invariant edge competition with affine geodesics. *Proceedings of VLISM2001 Symposium*, Vancouver, Canada, July (2001).

P23. Polyakov, F., Flash, T, Abeles, M., Ben-Shaul Y., Drori, R. and Nadasdy Z. Analysis of motion planning and learning in monkey scribbling movements, *Proceedings of IGS 2001*, Nijmegen, The Netherlands, (2001).

P24. Biess A., Flash, T. and Gielen C.C.A.M, Multijoint point-to-point arm movements of humans in 3-D space – minimum kinetic energy paths *Proceedings of IGS 2001*, Nijmegen, The Netherlands.