

SIYANG YANG

Department of Mathematics, A342 Wells Hall
Michigan State University, East Lansing, MI 48824
(512) 461-9237, yangsy@math.msu.edu, www.math.msu.edu/~yangsy

PUBLICATIONS

PUBLISHED

1. *Mode Decomposition Evolution Equations*, Y. Wang, G. Wei and S. Yang, Journal of Scientific Computing, **50**, 495-518 (2012) [link to the online pdf file](#)
2. *Iterative Filtering Decomposition Based on Local Spectral Evolution Kernel*, Y. Wang, G. Wei and S. Yang, Journal of Scientific Computing, **50**, 629-664 (2012) [link to the online pdf file](#)
3. *Selective extraction of entangled textures via adaptive PDE transform*, Y. Wang, G. Wei and S. Yang, International Journal of Biomedical Imaging, published online DOI:10.1155/2012/958142 (2012) [link to the online pdf file](#)
4. *Partial differential equation transform – Variational formulation and Fourier analysis*, Y. Wang, G. Wei and S. Yang, International Journal for Numerical Methods in Biomedical Engineering, published online DOI:10.1002/cnm.1452 (2011) [link to the online pdf file](#)
5. *Biomolecular surface construction by PDE transform*, Q. Zheng, S. Yang and G. Wei, International Journal for Numerical Methods in Biomedical Engineering, published online DOI:10.1002/cnm.1469 (2011) [link to the online pdf file](#)
6. *Conical Intersections: Electronic Structure, Dynamics & Spectroscopy*, S. Yang and T. J. Martinez, World Scientific Publishing Co. (2010)
7. *An optimal spawning algorithm for adaptive basis set expansion in nonadiabatic dynamics*, S. Yang, J. D. Coe, B. Kaduk and T. J. Martnez, J. Chem. Phys. 130, 134113 (2009) [link to the online pdf file](#)
8. *Multidimensional Quantum Mechanics with Trajectories: Capturing geometric phase effects near conical intersections*, S. Yang and T. J. Martnez, ed. D. V. Shalashilin and M. P. de Miranda (2009) [link to the online pdf file](#)
9. *Non-classical hybrid surface jump in nonadiabatic transitions*, S. Yang and T. J. Martinez, Progress in Theoretical Chemistry and Physics (2008) [link to the online pdf file](#)
10. *Path-integral virial estimator for reaction rate calculation based on the quantum instanton approximation*, S. Yang, T. Yamamoto and W. H. Miller, J. Chem. Phys. 124, 084102 (2006) [link to the online pdf file](#)
11. *Quantum reaction rate from higher derivatives of the thermal flux-flux autocorrelation function at time zero*, M. Ceotto, S. Yang and W. H. Miller, J. Chem. Phys. 122, 044109 (2005) [link to the online pdf file](#)
12. *Quantum instanton approximation for thermal rate constants of chemical reactions*, W. H. Miller, Y. Zhao, M. Ceotto and S. Yang, J. Chem. Phys. 119, 1329 (2003) [link to the online pdf file](#)

13. *Comparison of discrete singular convolution and Fourier pseudospectral methods for solving partial differential equations*, S. Yang, Y. Zhou and G.W. Wei, Comp. Phys. Comm. 143, 113 (2002) [link to the online pdf file](#)

UNPUBLISHED

14. *Partial differential equation transform for hyperbolic conservation laws*, L. Hu, S. Yang, Q. Zheng and G. Wei, Journal of Scientific Computing, submitted (2011) [link to the online pdf file](#)
15. *The partial differential equation transform – a robust method for signal, image and data analysis*, Y. Wang, G. Wei and S. Yang, submitted (2011) [link to the online pdf file](#)
16. *High Order Edge Detection using PDE Transforms*, R. Saxena and S. Yang, submitted (2011) [link to the online pdf file](#)
17. *Semiclassical analysis of quantum dynamics*, S. Yang, to be submitted (2011) available online arXiv:1110.4035 [link to the online pdf file](#)
18. *Differential geometry and topological invariant approaches to biomolecular structure and dynamics*, X. Feng, Q. Zheng, S. Yang, Y.Y. Tong, Y. Wang, H. M. Zhou, and G. W. Wei. Discrete and Continuous Dynamical Systems, B, submitted (2010)