### Mini-symposium A7

**Rare Events: Modeling, Computation, and Applications**

**Organizers:**
- Weiqing Ren  
  Department of Mathematics  
  National University of Singapore  
  Email: matrw@nus.edu.sg
- Lei Zhang  
  Beijing International Center for Mathematical Research  
  Peking University, China  
  Email: zhangl@math.pku.edu.cn

**Fri - 9 Jan 2015 | 11:00 – 12:30 | Room 04-40/41, Block S16**

**Chair:** Lei Zhang

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| 11:00 | A7-01 Invited  
  Rare event study for the stochastic Cahn-Hilliard dynamics  
  Tiejun Li  
  Peking University, China |
| 11:30 | A7-02 Invited  
  The string method for the study of rare events  
  Weiqing Ren  
  National University of Singapore and Institute of High Performance Computing, A*STAR, Singapore |
| 12:00 | A7-03 Invited  
  Investigation Conformational Changes of Biological Macromolecules Using Kinetic Network Models  
  Lizhe Zhu, Xuhui Huang  
  Department of Chemistry, The Hong Kong University of Science and Technology, Hong Kong |

**Fri - 9 Jan 2015 | 14:00 – 15:30 | Room 04-40/41, Block S16**

**Chair:** Weiqing Ren

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| 14:00 | A7-04 Invited  
  Investigating the stochastic models incorporating different gene states  
  Hao Ge$^{1,2}$, Shasha Chong$^3$, Chongyi Chen$^{3,4}$, Hong Qian$^5$, X. Sunney Xie$^{1,3}$  
  $^1$Biodynamic Optical Imaging Center (BIOPIC), Peking University, China; $^2$Beijing International Center for Mathematical Research (BICMR), Peking University, China; $^3$Department of Chemistry and Chemical Biology, Harvard University, USA; $^4$Department of Molecular and Cellular Biology, Harvard University, USA; $^5$Department of Chemistry and Chemical Biology, Harvard University, USA |
| 14:30 | A7-05 Invited  
  Finding Transition Pathways on Manifolds  
  Tiejun Li, Xiaoguang Li, Xiang Zhou  
  Department of Mathematics, City University of Hong Kong |
| 15:00 | A7-06 Invited  
  An adapted step length string method and its convergence to the minimum energy path  
  Yu Lun, Lei Zhang  
  Peking University, China |

**Fri - 9 Jan 2015 | 16:00 – 17:30 | Room 04-40/41, Block S16**

**Chair:** Weiqing Ren

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| 16:00 | A7-07 Invited  
  A Constrained Lattice Density Functional Theory and its Use in Vapor-liquid Nucleation  
  Yawei Liu, Xianren Zhang  
  State Key Laboratory of Organic-Inorganic Composites, Beijing University of Chemical Technology, Beijing 100029, China |
| 16:30 | A7-08 Invited  
  Rare event sampling for conformational change and ligand binding for biomolecules  
  Hiroshi Fujisaki  
  Department of Physics, Nippon Medical School |
| 17:00 | A7-09 Invited  
  Numerical Simulation of Minimum Action Path Between Bistable States of Kuroshio with Minimum Action Method  
  Wenqi Yao$^1$, Weiqing Ren$^{1,2}$  
  $^1$National University of Singapore, Singapore  
  $^2$Institute of High Performance Computing, Singapore |