

ELC International Meeting on Inference, Computation, and Spin Glasses

(ICSG 2013)

Journal of Physics: Conference Series Volume 473

**Sapporo, Japan
28-30 July 2013**

Gf kqt<

Yoshiyuki Kabashima

**ISBN: 978-1-63266-701-4
ISSN: 1742-6588**

Printed from e-media with permission by:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571



Some format issues inherent in the e-media version may also appear in this print version.

Copyright© by the Institute of Physics
All rights reserved.

Printed by Curran Associates, Inc. (2014)

For permission requests, please contact the Institute of Physics
at the address below.

Institute of Physics
Dirac House, Temple Back
Bristol BS1 6BE UK

Phone: 44 1 17 929 7481
Fax: 44 1 17 920 0979

techtracking@iop.org

Additional copies of this publication are available from:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: 845-758-0400
Fax: 845-758-2634
Email: curran@proceedings.com
Web: www.proceedings.com

TABLE OF CONTENTS

Statistical-mechanics Analysis of Gaussian Labeled-unlabeled Classification Problems	1
<i>Toshiyuki Tanaka</i>	
Free Products of Large Random Matrices - A Short Review of Recent Developments	9
<i>Zdzislaw Burda</i>	
Reconstruction Algorithm in Compressed Sensing Based on Maximum a Posteriori Estimation	30
<i>Koujin Takeda, Toshiyuki Kabashima</i>	
Simplifying Generalized Belief Propagation on Redundant Region Graphs	41
<i>Chuang Wang, Hai-Jun Zhou</i>	
Belief Propagation with Multipoint Correlations and Its Application to Inverse Problem	55
<i>Masayuki Ohzeki</i>	
A Generalization of Improved Susceptibility Propagation	69
<i>M. Yasuda</i>	
Loop Calculus and Bootstrap-belief Propagation for Perfect Matchings on Arbitrary Graphs	85
<i>M. Chertkov, A. Gelfand, J. Shin</i>	
Statistical Inference of Co-movements of Stocks During a Financial Crisis	98
<i>Takero Ibuki, Shunsuke Higano, Sei Suzuki, Jun-Ichi Inoue, Anirban Chakraborti</i>	
Single-trial Estimation of Stimulus and Spike-History Effects on Time-Varying Ensemble Spiking	
Activity of Multiple Neurons: A Simulation Study	114
<i>Hideaki Shimazaki</i>	
Inference of Hopfield-Potts Patterns from Covariation in Protein Families: Calculation and Statistical Error Bars	126
<i>Simona Cocco, Remi Monasson, Martin Weigt</i>	
Thermal, Quantum and Simulated Quantum Annealing: Analytical Comparisons for Simple Models	146
<i>V. Bapst, G. Semerjian</i>	
An Irreversible Markov-chain Monte Carlo Method with Skew Detailed Balance Conditions	154
<i>K. Hukushima, Y. Sakai</i>	
Geometric Allocation Approaches in Markov Chain Monte Carlo	163
<i>S. Todo, H. Suwa</i>	
Randomness in Algorithm Design	173
<i>Shuji Kijima</i>	
Sharp Thresholds and the Partition Function	183
<i>Amin Coja-Oghlan, Daniel Reichman</i>	
A Survey on Pattern Formation of Autonomous Mobile Robots: Asynchrony, Obliviousness and Visibility	194
<i>Yukiko Yamauchi</i>	
The Physics of Distributed Information Systems	204
<i>Erik Aurell</i>	
Renormalization Group for Quantum Walks	216
<i>S. Boettcher, S. Falkner, R. Portugal</i>	
Stability of Topologically-Protected Quantum Computing Proposals as Seen Through Spin Glasses	226
<i>H. G. Katzgraber, R. S. Andrist</i>	
Packing Hard Spheres with Short-range Attraction in Infinite Dimension: Phase Structure and Algorithmic Implications	242
<i>M. Sellitto, F. Zamponi</i>	
The Hard-core Model on Random Graphs Revisited	260
<i>Jean Barbier, Florent Krzakala, Lenka Zdeborova, Pan Zhang</i>	
Performance of Simulated Annealing in P-Spin Glasses	269
<i>Florent Krzakala, Lenka Zdeborova</i>	
Zeros of the Partition Function and Dynamical Singularities in Spin-glass Systems	276
<i>K. Takahashi, T. Obuchi</i>	
Author Index	