

## List of Publications

Aila Särkkä

### Publications:

Särkkä, A. A note on robust intensity estimation for point processes, *Biometrical Journal* **34**, (1992), 757-767.

Salonen, V., Penttinen, A. and Särkkä, A. Plant colonization of harvested peat surface: population changes and spatial patterns, *Journal of Vegetation Science* **3**, (1992), 113-118.

Särkkä, A. Pseudo-likelihood approach for Gibbs point processes in connection with field observations, *Statistics* **26**, (1995), 89-97.

Goulard, M., Särkkä, A. and Grabarnik, P. Parameter estimation for marked Gibbs point processes through the maximum pseudo-likelihood method, *Scandinavian Journal of Statistics* **23**, (1996), 365-379.

Särkkä, A. and Tomppo, E. Modelling interactions between trees by means of field observations, *Forest Ecology and Management* **108**, (1998), 57-62.

Högmander, H. and Särkkä, A. Multitype spatial point patterns with hierarchical interactions, *Biometrics* **55**, (1999), 1051-1058

Grabarnik, P. and Särkkä, A. Interacting neighbour point processes: some models for clustering, *Journal of Statistical Computation and Simulation* **68**, (2001), 103-126.

Renshaw, E. and Särkkä, A. Gibbs point processes for studying the development of spatial-temporal stochastic processes, *Computational Statistics and Data Analysis* **36**, (2001), 85-105.

Schladitz, K., Särkkä, A., Pavenstädt, I., Haferkamp, O. and Mattfeldt, T. Statistical analysis of intramembranous particles using freeze fracture specimens. *Journal of Microscopy*, **211**, (2003), 137-153.

Kühlmann-Berenzon, S., Heikkinen, J. and Särkkä, A. An additive edge correction for the influence potential of trees. *Biometrical Journal*, **47(4)**, (2005), 517-526.

Särkkä, A. and Renshaw, E. The analysis of marked point patterns evolving through space and time. *Computational Statistics and Data Analysis*, **51**, (2006), 1698–1718.

Redenbach, C., Särkkä, A., Freitag, J. and Schladitz, K. Anisotropy analysis of pressed point processes. *Advances in Statistical Analysis*, **93**(3), (2009), 237–261.

Eckel, S., Fleischer, F., Grabarnik, P., Kazda, M., Särkkä, A. and Schmidt, V. Modelling tree roots in mixed forest stands by inhomogeneous marked Gibbs point processes. *Biometrical Journal*, **51**, (2009), 522–539.

Grabarnik, P. and Särkkä, A. Modelling the spatial structure of forest stands by multivariate point processes with hierarchical interactions. *Ecological Modelling*, **220**, (2009), 1232–1240.

Comas, C., Mateu, J. and Särkkä, A. A third order point process characteristic for multi-type point processes. *Statistica Neerlandica*, **64** (1), (2010), 19–44.

Cronie, O. and Särkkä, A. Some edge correction methods for marked spatio-temporal point process models. *Computational Statistics and Data Analysis*, **55** (7), (2011), 2209–2220.

Waller, L.A., Särkkä, A., Olsbo, V., Myllymäki, M., Panoutsopoulou, I.G., Kennedy, W.R., and Wendelschafer-Crabb, G. Second-order spatial analysis of epidermal nerve fibres. *Statistics in Medicine*, **30** (23), (2011), 2827–2841.

### **Submitted papers:**

Myllymäki, M., Särkkä, A. and Panoutsopoulou, I. Analysis of spatial structure of epidermal nerve entry point patterns based on replicated data. Submitted to *Journal of Microscopy*.

Redenbach, C. and Särkkä, A. Parameter estimation for growth interaction processes using spatio-temporal information. Submitted to *Computational Statistics & Data Analysis*.

### **Discussion papers:**

Särkkä, A. Discussion of the paper by Sergei Zuyev (telecommunication session). The Proceedings of the International Statistical Institute, Helsinki, Finland, (1999).

Stoyan, D. and Särkkä, A. Discussion article in the discussion of paper Residual analysis for spatial point processes by A. Baddeley, R. Turner, J. Møller and M. Hazelton, *Journal of the Royal Statistical Society B*, **67(5)**, (2005), 617–666.

Grabarnik, P. and Särkkä, A. Discussion article in the discussion of the paper Modern Statistics for Spatial Point Processes by Møller and Waagepetersen. *Scandinavian Journal of Statistics*, **34(4)**, (2007), 643–711.

### **Refereed Conference Proceedings:**

Grabarnik, P. and Särkkä, A. Some interaction models for clustered point patterns: application to forestry. The Proceedings of S4G International Conference on Stereology, Spatial Statistics and Stochastic Geometry, Prague, Czech Republic, (1999).

Lautensack, C., Schladitz, K. and Särkkä, A. Modeling the microstructure of sintered copper in Proceedings of the Stereology, Spatial Statistics and Stochastic Geometry 6th International Conference Prague, Czech Republic, 26-29 June 2006.

### **Conference Proceedings (not refereed):**

Särkkä, A. The pseudo-likelihood approach for Gibbs point processes in connection with field observations, The Proceedings of the IUFRO S4.11 conference on Stochastic spatial models in forestry, Keith Rennols (Ed.), The University of Greenwich, (1993), 37-46.

Kühlmann, S., Heikkinen, J., Särkkä, A. and Hjorth, U. Relating Abundance of Ground Vegetation Species and Tree Patterns at Local Scale using Ecological Field Theory. The Proceedings of the IUFRO 4.11 Conference: Forest Biometry, Modelling and Information Science, Greenwich, (2001).

Särkkä, A. and Renshaw, E. Some space-time interaction models for marked point processes. The proceedings of Spatial point process modelling and its applications, Castellón, Spain, (2004).

Grabarnik, P., Särkkä, A. and Komarov, A. Modelling of a spatial structure of a forest stand by Gibbs point processes with hierarchical interactions. The Proceedings of the 5th European Conference on Ecological Modelling, Pushchino, Russia, (2005).

Särkkä, A. Modelling growth of trees by space-time growth-interaction processes. In Proceedings of the International Workshop on Spatio-Temporal Modelling (METMA3), Pamplona, Spain (2006).

Grabarnik, P. and Särkkä, A. Modelling the spatial and space-time structure of forest stands: How to model asymmetric interaction between neighbouring trees. *Spatial Statistics 2011: Mapping Global Change, Procedia Environmental Sciences*, 7, 62–67 (2011).