

## Publications of Professor Stoyan

### Books (since 1993)

- ☐ **Stochastik für Ingenieure und Naturwissenschaftler.**  
Akademie Verlag, Berlin 1993.
- ☐ **Geometrische Wahrscheinlichkeiten und Stochastische Geometrie.**  
Akademie Verlag, Berlin 1993.  
*(joint work with R. V. Ambartzumian and J. Mecke)*
- ☐ **Fractals, Random Shapes and Point Fields.**  
Methods of Geometrical Statistics.  
J. Wiley & Sons, Chichester, New York, Brisbane, Toronto, Singapore 1994.  
*(joint work with H. Stoyan)*  
(corrected reprint 1995)
- ☐ **Stochastic Geometry and its Applications.**  
J. Wiley & Sons, Chichester, New York, Brisbane, Toronto, Singapore 1995.  
*(joint work with W. S. Kendall and J. Mecke)*  
(2<sup>nd</sup> revised edition of a book from 1987)

### Paperback edition 2008

- ☐ **Umweltstatistik**  
B. G. Teubner Verlagsgesellschaft, Stuttgart, Leipzig, 1997.  
*(joint work with Helga Stoyan and Uwe Jansen)*
  
- ☐ **Statistical Physics and Spatial Statistics. The Art of Analyzing and Modeling Spatial Structures and Pattern Formation**  
Lecture Note in Physics 554, Springer-Verlag, Berlin, Heidelberg, New York 2000  
*(Editor jointly with Klaus Mecke)*
- ☐ **Comparison Methods for Stochastic Models and Risks.**  
J. Wiley & Sons, Chichester, New York, Brisbane, Toronto, Singapore 2002.  
*(joint work with Alfred Müller)*  
(Completely revised and renewed edition of a book from 1983)
- ☐ **Morphology of Condensed Matter. Physics and Geometry of Spatially Complex Systems**  
Lecture Notes in Physics 600, Springer-Verlag, Berlin, Heidelberg, New York 2002  
*(editor jointly with Klaus Mecke)*
  
- ☐ **Papers in Honour of JOSEPH MECKE**  
In: Advances in Applied Probability, March 2003  
*(editor jointly with Eva B. Vedel Jensen)*
  
- ☐ **Case Studies in Spatial Point Process Modeling**  
Lecture Notes in Statistics 185, Springer-Verlag, Berlin, Heidelberg, New York 2006  
*(editor jointly with Adrian Baddeley, Pablo Gregori, Jorge Mateu and Radu Stoica)*
  
- ☐ **Statistical Analysis and Modelling of Spatial Point Patterns**  
J. Wiley & Sons, Chichester, New York, Brisbane, Toronto, Singapore 2008.

*(joint work with J. Illian, A. Penttinen and H. Stoyan)*

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☐ **Stochastic Geometry and its Applications. Third Edition.**

**J. Wiley & Sons, Chichester, New York, Brisbane, Toronto, Singapore 2013.**

*(joint work with S.N. Chiu, W.S. Kendall and J. Mecke)*

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### Papers in Journals and Proceedings

#### 2014

- **Surfaces of Hard-Sphere Systems**  
Image Anal Stereol 33, 225-229.
- **Planar Sections through Three-dimensional Line-segment Processes**  
Image Anal Stereol 33, 55-64.  
*(joint work with S. D. Matthes).*
- **Cuboidal Dice and Gibbs Distributions**  
Metrika 77, 247-256.  
*(joint work with W. Riemer und D. Obreschkow).*
- **Spatial autocorrelation of tree attributes in naturally regenerated managed beech (*Fagus sylvatica*) forests in the Beskid Niski Mountains, southern Poland.**  
Dendrobiology 71, 129-136.  
*(joint work with J. Szmyt).*

#### 2013

- **Trends in the Seasonality of Births and Deaths of European Noblemen from the 14th to the 20th Century**  
Popolazione e Storia. 14, 61-73.  
*(joint work with H. Stoyan).*
- **Surface area and volume fraction of random open-pore systems**  
Modelling Simul. Mater. Sci. Eng. 21, 085005.  
*(joint work H. Hermann und A. Elsner).*
- **Back to and beyond Weibull -- The hazard function approach**  
Computational Materials Scie. 68, 181-188.  
*(joint work with C. Funke and S. Rasche).*
- **Weibull, RRSB or extreme-value theorists?**  
Metrika 76, 153-159.

#### 2012

- **Coin migration and seignorage within the Euro area.**  
Jahrbücher für Nationalökonomie und Statistik 232, 84-92.  
*(joint work with F. Seitz and K.-H. Tödter).*
- **Punktprozess-Statistik in Aktion**  
Leopoldina Jahrbuch 2011, 421-440.

#### 2011

- Desynchronizing effects of lightning strike disturbances on cyclic forest dynamics in mangrove plantations.  
Aquatic Botany 95, 173-181.  
*(joint work with M. Kautz, U. Berger u.a.)*
- "Würfeln" mit Quadern - die Gibbs-Verteilung.  
Mathematisch-Naturwissenschaftlicher Unterricht 64, 205-214.  
*(joint work with W. Riemer)*
- Statistical characterization of the pore space of random systems of hard spheres.  
J. Non-Crystalline Solids 357, 1508-1515.  
*(joint work with A. Wagner, H. Hermmann und A. Elsner)*
- Model-based analysis of the influence of ecological processes on forest point pattern formation - A case study.  
Ecological Modelling 222, 666-678.  
*(joint work with A. Pommerening und V. LeMay)*
- Statistische Tests in Gymnasiallehrbüchern.  
Stochastik in der Schule 31, 28-32.

## 2010

- Multi-scale pattern analysis of a mound-building termite species.  
Insectes Sociaux 57, 477-488.  
*(joint work with C. Grohmann, J. Oldeland and K.E. Linsenmair)*
- Hydration shells in Voronoi tessellations .  
In: M. A. Mostafavi (ed.) 7th Internat. Symp. on Voronoi Diagrams in Science and Engineering. IEEE Computer Soc., 254-259.  
*(joint work with V. P. Voloshin, A.V. Anikeenko, N.N. Medvedev and A. Geiger)*
- Measuring galaxy segregation with the mark correlation function.  
Astronomy & Astrophysics 513, A22.  
*(joint work with V. J. Martinez and P. Arnalte-Mur)*
- More on the microstructural characterization of dense particle gels.  
J. European Ceramics Soc. 30, 1237-1243.  
*(joint work with A. Wagner and M. Hütter)*
- Variogram analysis of charge-carrier effective lifetime topograms in mc-Si materials.  
Solar Energy Materials & Solar Cells, 94, 164-170.  
*(joint work with K. Niemietz, A. Wagner, B. Gründig-Wendrock and J. R. Niklas)*
- Simulation of brittle fracture of autoclaved aerated concrete.  
Computers and Concrete, 7, 39-51.  
*(joint work with I. Kadashevich)*
- Discussion on the paper by Diggle, Menezes and Su.  
J. Royal Statistical Society, Series C, Applied Statistics 59, 221 and 223.  
*(joint work with M. Myllymäki and F. Ballani)*

## 2009

- Ranges of control in the transcriptional regulation of Escherichia coli.  
BMC Systems Biology, 3:119.  
*(joint work with N. Sonnenschein, M.-T. Hütt and H. Stoyan)*
- Symposium - Recent challenges for statistics in the Biosciences - 100 years after Gustav Zeuner.  
Leopoldina (R 3) 54, 267-271.

- Nachruf Paul Heinz Müller, 23. August 1924 - 10. Mai 2009.  
Z. Angew. Math. Mech 89, 1002-1004.  
*(joint work with R. Kühne, G. Maibaum, V. Nollau and Th. Riedrich ).*
- Specific surface area and volume fraction of the cherry-pit model with packed pits.  
J. Phys. Chem. B 113, 7780-7784.  
*(joint work with A. Elsner, A. Wagner, T. Aste and H. Hermann).*
- Größen 2. Ordnung in der Punktprozess-Statistik.  
Die grüne Reihe. 20. Tagung Freiburg 2008, 105-118.
- Spatial statistics of carbon nanotube polymer composites.  
Polymer 50, 2123-2132.  
*(joint work with S. Pegel, P. Pötzschke, T. Villmow and G. Heinrich).*
- Modeling the tensile strength and crack length of wire-sawn Silicon wafers.  
J. Solar Energy Eng. 131, 011012-1-6.  
*(joint work with C. Funke and S. Wolf).*
- Coin migration within the euro area.  
Deutsche Bundesbank, Discussion Paper, Series 1: Economic Studies, No.27/2009.  
*(joint work with F. Seitz and K.H. Tödter).*

## 2008

- A beam-network model for autoclaved aerated concrete and its use for the investigation of relationships between Youngs modulus and microstructure  
Comput. Mat. Scie. 43, 293-300.  
*(joint work with I. Kadashevich).*
- Reconstructing spatial tree point patterns from nearest neighbour summary statistics measured in small subwindows  
Can. J. For. Res. 38, 1110-1122.  
*(joint work with A. Pommerening).*
- Modelling marked point patterns by intensity-marked Cox processes  
Statist. & Prob. Letters 78, 1184-1199.  
*(joint work with L. P. Ho).*
- Parameter estimation and model selection for Neyman-Scott point processes  
Biometrical J. 50, 43-57.  
*(joint work with U. Tanaka and Y. Ogata).*
- Statistische Untersuchung der Druckfestigkeit von Porenbeton - Größeneffekt und Umrechnungsfaktoren  
Mauerwerk 12, 19-24.  
*(joint work with S. Wolf, H. Walther, P. Lenager).*

## 2007

- Observation of fivefold symmetry structures in computer models of dense packing of hard spheres  
J. Noncryst. Solids 353, 3545-3549.  
*(joint work with A. V. Anikeenko, N. N. Medvedev and A. Bezrukov).*
- Geometrical-statistical modelling of systems of fracture zones along oceanic ridges  
Geophys. J. Int. 170, 605-614.  
*(joint work with K. Lochmann and R. Gloaguen).*
- Ly-alpha forest: efficient unbiased estimation of second-order properties with missing data  
Astr. & Astrophys. 466, 403-411. *(joint work with R. Vio, V. Odorico and H. Stoyan)*

- Comments to the paper "Modern statistics for spatial point processes" by Jesper Møller and Rasmus Waagepetersen  
Scand. J. Statist. [Click here](#)

## 2006

- Modelling the microstructure of concrete with spherical grains  
Comput. Materials Sci. 35, 399-407.  
*(joint work with F. Ballani and D. J. Daley)*
- Fundamentals of Point Process Statistics  
In: Case Studies in Spatial Point Process Modeling. (Herausg. A. Baddeley u.a.)  
Lecture Notes in Statistics 185, Springer-Verlag Berlin-Heidelberg-New York, pp. 3-22.
- Characterisation methods for functionally graded materials  
J. Materials Sci. 41, 4143-4151.  
*(joint work with G. Tomandl, M. Mangler, A. Tscheschel, J. Goebbels and G. Weidemann)*
- Using Pareto and Weibull distributions in the modelling of growth processes  
South African Statist. J. 40, 75-98.  
*(joint work with H. Ghorbani)*
- Statistical verification of crystallization in hard sphere packings under densification  
European Physical J. B 53, 67-76.  
*(joint work with K. Lochmann, A. Anikeenko, A. Elsner and N. Medvedev)*
- Stochastic models for pad structure and pad conditioning used in chemical-mechanical polishing  
J. Engineering Mathematics 54, 333-343.  
*(joint work with mit S. Wiegand)*
- Edge-correction needs in estimating indices of spatial forest structure  
Canadian J. Forest research 36, 1723-1739.  
*(joint work with A. Pommerening)*
- On estimators of the nearest neighbour distance distribution function for stationary point processes  
Metrika 64, 139-150.
- Statistik für poröse Medien.  
Jahrbch 2005 Leopoldina 51, 415-419.
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## 2005

- Personal Reminiscences of Georges Matheron  
In: Space, Structure, and Randomness. Springer Lecture Notes in Statistics 183, pp. V-VIII.
- The Boolean Model: from Matheron till Today  
In: Space, Structure, and Randomness. Springer Lecture Notes in Statistics 183, pp. 151-182.  
*(joint work with K. Mecke)*
- Aerated autoclaved concrete: Stochastic structure model and elastic properties  
Proc. Appl. Math. Mech. 5,1, 419-420.  
*(joint work with I. Kadashevich)*
- Second-order Analysis by Variograms for Curvature Measures  
Eur. Phys. J. B 47, 397-409.  
*(joint work with C. H. Arns, J. Mecke and K. Mecke)*

- **Morphological Characterization of Point Patterns**  
Biometrical Journal 47, 473-488.  
*(joint work with K. Mecke)*
- **Micro-mechanical Analysis of AAC**  
In: Autoclaved Aerated Concrete. Innovation and Development. (Ed. M. C. Limbachiya and J. J. Roberts)  
Taylor & Francis. S. 219-228.  
*(joint work with I. Kadashevich)*
- **Stochastic Modelling of the Geometrical Microstructure of AAC**  
In: Autoclaved Aerated Concrete. Innovation and Development. (Ed. M. C. Limbachiya and J. J. Roberts)  
Taylor & Francis. S. 229-234.  
*(joint work with I. Kadashevich)*
- **The Compressive Strength of AAC - a Statistical Investigation**  
In: Autoclaved Aerated Concrete. Innovation and Development. (Ed. M. C. Limbachiya and J. J. Roberts)  
Taylor & Francis. S. 287-296.  
*(joint work with S. Wolf, S. Wiegand and H. B. Walther)*
- **Computer Simulated Dense-random Packing Models as Approach to the Structure of Porous Low-k Dielectrics**  
Microelectronic Engineering 81, 535-543.  
*(joint work with H. Hermann, A. Elsner and M. Hecker)*
- **Statistical Modeling of the Geometrical Structure of the System of Artificial Air Pores in Autoclaved Aerated Concrete**  
Cement and Concrete Research 35, 1495-1502.  
*(joint work with I. Kadashevich and H.-J. Schneider)*

#### 2004

- **From the Amorphous Phase to the Defect Crystal. Analysis of Structural Properties of Dense Packings of Hard Spheres.**(In Russian.)  
Zh. Strukturnoy Khimii 45, 24-31.  
*(joint work with I. Medvedev and A. Bezrukov)*
- **Statistical Characterization of TEM Images of Silica-filled Rubber**  
J. Microscopy 217, 75-82.  
*(joint work with A. Tscheschel and J. Lacayo)*
- **Statistical Analyses and Modelling of the Mixing Process of Euro Coins in Germany and Europe**  
Australian & New Zealand J. Statistics 46, 67-78.  
*(joint work with H. Stoyan and G. Döge)*
- **On Probability Distributions of Contact Force Magnitudes in Loaded Dense Granular Media**  
Granular Matter 6, 17-26.  
*(joint work with C. Radeke, K. Bagi and B. Palancz)*
- **Grand Canonical Simulations of Hard-Disk Systems by Simulated Tempering**  
Int. J. Modern Physics C 15, 129-147.  
*(joint work with G. Döge, K. Mecke, J. Moller and R. Waagepetersen)*
- **Second-order stereology of spatial fibre systems**  
J. Microscopy 216, 156-164.  
*(zusammen mit R. A. Krasnoperov)*

#### 2003

- **Mechanical and Statistical Analyses of Loaded Sphere Packings by Means of FEM**  
In: Numerical Modeling in Micromechanics via Particle Methods. (editor Konietzky)  
Swets & Zeitlinger, Lisse. S. 13-18.  
*(joint work with C. Radeke and M. Kuna)*
- **Statistical Analyses of Euro Coin Mixing**  
Mathematical Spectrum 35, 50-55.
- **50 Jahre Metropolis et al.**  
DMV-Mitteilungen 1/2003, 17-22.  
*(joint work with G. Döge)*
- **On the Estimation Variance for the Specific Euler-Poincare Characteristic of Random Networks**  
Journal of Microscopy 211, 80-88.  
*(joint work with A. Tscheschel)*
- **On a Qualitative Relationship between Degree of Inhomogeneity and Cold Crushing Strength of Refractory Castables**  
Cement and Concrete Research 33, 747-753.  
*(joint work with J. Hubalkova)*

## 2002

- **Simulation and Characterization of Random Systems of Hard Particles**  
Image Anal. Stereol. 21, S41-S48.
- **Random Systems of Hard Particles: Models and Statistics**  
Chinese J. Stereology and Image Analysis 7, 1-14.
- **Ein gutes, zusammengedrücktes, gerütteltes, überfließendes Maß**  
DMV-Mitteilungen 1/2002, 7-11.
- **Force Distribution Analysis in Loaded Planar Disc Systems by Means of FEM**  
Granular Matter 4, 71-76.  
*(joint work with Ch. Radeke and H. Gläser)*
- **Point Field Models for the Galaxy Point Pattern. Modelling the Singularity of the Two-Point Correlation Function**  
Astronomy and Astrophysics 388, 758-765.  
*(joint work with M. Snelhage, V. Martinez and E. Saar)*
- **Statistical Analysis of Simulated Random Packings of Spheres**  
Part. Part. Charact. 19, 111-118.  
*(joint work with A. Bezrukov und M. Bargiel)*
- **Shape Statistics for Random Domains and Particles**  
In: Morphology of Condensed Matter. Physics and Geometry of Spatially Complex Systems.

Springer Lecture Notes in Physics 600, pp. 299-316.

*(joint work with A. Davtyan and D. Turetayev)*

- Statistics for Non-sparse Spatially Homogeneous Gibbs Point Processes.  
In: Morphology of Condensed Matter. Physics and Geometry of Spatially Complex Systems.  
Springer Lecture Notes in Physics 600, pp. 418-427.  
*(joint work with D. Döge)*

## 2001

- On Animal Abundance Estimation Based on Pitfall Traps  
Biometrical J. 43, 45-52.  
*(joint work with Volkmar Kuschka)*
- Estimating the Fruit Dispersion of Anemochorous Forest Trees  
Ecological Modelling 145, 35-47.  
*(joint work with Sven Wagner)*
- Packing Densities and Simulated Tempering for Hard Core Gibbs Processes  
Ann. Inst. Statist. Math. 53, 661--680  
*(joint work with S. Mase, J. Møller, R.P. Waagepetersen, and G. Döge)*
- On the Estimation of Distance Distribution Functions for Point Processes and Random Sets  
Image Anal. Stereol. 20, 65-69.  
*(joint work with H. Stoyan, A. Tscheschel and T. Mattfeldt)*
- Spatial Statistics for Simulated Packings of Spheres  
Image Anal. Stereol. 20, 203-206.  
*(joint work with A. Bezrukov and M. Bargiel)*

## 2000

- Improving Ratio Estimators of Second Order Point Process Characteristics  
Scand. J. Statist. 27, 641-656.  
*(joint work with Helga Stoyan)*
- On the Validity of the Weibull Fracture Model for Brittle Particles  
Granular Matter 2, 165-170.  
*(joint work with U. Jansen)*
- Random Sequential Adsorption: Relationship to Dead Leaves and Characterisation of Variability  
J. Statist. Phys. 100, 969-979.  
*(joint work with M. Schlather)*
- A Method for Estimating Variogram Parameters in the Presence of Trends  
Mathematische Geologie (Dresden)5, 59-68.  
*(joint work with J. Menz and N. Kolesnikov)*
- Improved Estimation on the Pair Correlation Function of Random Sets  
J. Microscopy 200, 158-173.  
*(joint work with T. Mattfeldt)*
- Erosion-Dilation Analysis for Experimental and Synthetic Microstructures of Sedimentary Rock  
Physica A 284, 46-58  
*(joint work with Andre Tscheschel and Rüdiger Hilfer)*
- Estimating Number Density - A Comparison of the Improved Saltykov Estimator and the Disector  
Image Anal. Stereol. 19, 209-214.  
*(joint work with A. Davtian and U. Hahn)*



- **Recent Applications of Point Process Methods in Forestry Statistics**  
Statistical Science 15, 61-78.  
*(joint work with A. Penttinen)*
  - **Basic Ideas of Spatial Statistics**  
Content: In: Statistical Physics and Spatial Statistics. Lecture Note in Physics 554 (ed. K. Mecke and D. Stoyan, 3-20.)
  - **Correlations between Disorientations in Neighbouring Dislocation Boundaries**  
Acta Materialia 48, 3005-3014.  
*(joint work with W. Pantleon)*
  - **On Variograms in Point Process Statistics, II: Models of Markings and Ecological Interpretation**  
Biometrical J. 42, 171-187.  
*(joint work with O. Walder)*
  
  - **Neue Methoden zur Analyse und Charakterisierung von Bestandstrukturen (New Methods for the Analysis and Characterization of Forest Stand Structures)**  
Forstw. Cbl. 119, 62-78.  
*(joint work with A. Pommerening, P. Biber and H. Pretzsch)*
-