Piet Groeneboom
Curriculum Vitae, 2016

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Affiliations

Emeritus Professor of Statistics, Delft University of Technology and Vrije Universiteit, Amsterdam.

Professional Career:

- Ph. D. dissertation (1979): Large deviations and asymptotic efficiencies (supervisor: J. Oosterhoff).
- Mathematical Centre (CWI), Amsterdam: 1973-1984.
- Visiting assistant professor UW, Seattle (Department of Statistics and Mathematics): 1979-1981 (unpaid leave from Mathematical Centre).
- Professor of Statistics at the University of Amsterdam (Department of Mathematics): 1984-1988.
- Professor of Statistics at Delft University of Technology (Department of Mathematics and Computer Science): 1988-2006. Emeritus professor since 2006.
- Visiting Professor, Stanford University, Department of Statistics (on leave from the Delft University from June till September, 1990; invitation by David Siegmund, Iain Johnstone and Persi Diaconis).
- Visiting Professor, Université Paris VI, Spring 1994.
- Visiting Professor, Department of Statistics, University of Washington, Seattle, Spring 1998 and Spring 1999.
- Affiliate Professor of Statistics, University of Washington, Department of Statistics, Seattle, U.S.A. since May 1999.

- Affiliate professor of Statistics, Free University, Amsterdam, Department of Mathematics, 2000-2006. Emeritus professor since 2006.
- Visiting Professor, Institut Henri Poincaré, Paris. February-March, 2001.
- Visiting Professor, Department of Statistics, University of Washington, Seattle, Spring 2006.
- Visiting Professor, ETH, Zürich, Fall 2007.

Miscellanea:

- Fellow of the IMS.
- Elected member of ISI.
- Rollo Davidson prize 1985, Cambridge, UK, for the preprint "Brownian motion with a parabolic drift and Airy functions", Report MS-R8413, Mathematical Centre, Amsterdam (which appeared in Probability Theory and Related Fields (1989)).
- Visitor at MSRI, Berkeley, 1983 and 1991.
- Invited organizer of a DMV (Deutsche Mathematiker Vereinigung) seminar, 1990.
- Special Invited Paper at Joint Statistical Meeting, Boston, 1992, with David Donoho and Niels Keiding as discussants.
- Invited lecturer at the Ecole d'Eté de Probabilités de Saint-Flour, 1994.
- Wald lecturer, Joint Statistical Meeting, Montreal, 2013.

Ph. D. students:

- Jaap Praagman (jointly supervised with Peter Sander).
  Dissertation: Efficiency of change-point tests.
  Ph. D. examination: Juni 27, 1986, Eindhoven University of Technology.

- Albertus Jacob van Es.
  Dissertation: Aspects of Nonparametric Density Estimation.
  Ph. D. examination: November 2, 1988, University of Amsterdam.

- Ello Aart Gijsbert Weits.
  Dissertation: A stochastic heat equation for freeway traffic flow.
  Ph. D. examination: May 17, 1990, Delft University of Technology.

- Frank Windmeyer (jointly supervised with H. Neudecker).
  Dissertation: Goodness of Fit in Linear and Qualitative-Choice models.
  Ph. D. examination: June 9, 1992, University of Amsterdam.

- Annoesjka Joberte Cabo (jointly supervised with Adrian Baddeley).
  Dissertation: Set Functionals in Stochastic Geometry.
  Ph. D. examination: June 28, 1994, Delft University of Technology.

- Geurt Jongbloed.
  Dissertation: Three Statistical Inverse Problems.
  Ph. D. examination: October 9, 1995, Delft University of Technology.

- Ronald Bertus Geskus.
  Dissertation: Estimation of Smooth Functionals with Interval Censored Data and something completely different.
  Ph. D. examination: February 11, 1997, Delft University of Technology.

- Peter-Paul de Wolf.
  Dissertation: Estimating the extreme value index -tales of tails.
  Ph. D. examination: October 5, 1999, Delft University of Technology.

- Vladimir Nikolaevich Koulikov.
  Dissertation: Direct and indirect use of maximum likelihood.
  Ph. D. examination: January 21, 2003, Delft University of Technology.

- Marloes Henriette Maathuis (jointly supervised with Jon Wellner).
  Dissertation: Nonparametric Estimation for Current Status Data with Competing Risks.
  Ph. D. examination: June 7, 2006, University of Washington, Seattle.

- Stefanie Donauer (jointly supervised with Geurt Jongbloed).
  Dissertation: Asymptotics in Deconvolution Models - Approximating Perfect Knowledge.
  Ph. D. examination: March 18, 2009, Vrije Universiteit, Amsterdam.

- Birgit Ilja Witte (jointly supervised with Geurt Jongbloed).
  Dissertation: Current Status Censoring Models.
  Ph. D. examination: March 15, 2011, Delft University of Technology, Delft.

Books:

(1980) Large deviations and asymptotic efficiencies, Mathematical Centre Tract 118, Mathematical Centre, Amsterdam.

(1992) (with J.A. Wellner) Information bounds and nonparametric maximum likelihood estimation, Birkhäuser Verlag.

(1996) Lectures on inverse problems, in: Lectures On Probability and Statistics. Ecole d'Eté de de Probabilités de Saint-Flour XXIV, 1994. Ed. P. Bernard. Lecture Notes in Mathematics, 1648, 67-164. Springer Verlag, Berlin.

(2014) (with G. Jongbloed) Nonparametric Estimation under Shape Constraints: Theory, Algorithms, and Applications. To appear in the Cambridge Series in Statistical and Probabilistic Mathematics (CSPM).

Papers:

(1976) (with Y. Lepage and F.H. Ruymgaart), Rank tests for independence with best strong exact Bahadur slope, Zeitschrift for Wahrscheinlichkeitstheorie und Verw. Gebiete 36, 119-127.

(1977) (with J. Oosterhoff), Bahadur efficiency and probabilities of large deviations, Statistica Neerlandica 31, 1-24.

(1978) (with J. Hoogstraten, G.J. Mellenbergh and J.P.H. van Santen), Relevant variables in the advices of elementary school teachers on further education; an analysis of correlational structures (in Dutch), Tijdschrift voor Onderwijsresearch 3 (Journal for Educational Research), 262-280.

(1979) (with J. Oosterhoff and F.H. Ruymgaart), Large deviation theorems for empirical probability measures, Annals of Probability 7, 553-586.

(1981) (with G.R. Shorack), Large deviations of goodness of fit statistics and linear combinations of order statistics, *Annals of Probability,* vol. 9, 971-987.

(1981) (with J. Oosterhoff), Bahadur efficiency and small-sample efficiency, *International Statistical Review*, vol. 49, 127-141.

(1983) The concave majorant of Brownian motion, *Annals of Probability*, vol. 11, 1016-1027.

(1983) (with R. Pyke), Asymptotic normality of statistics based on convex minorants of empirical distribution functions, *Annals of Probability*, vol. 11, 328-345.

(1985) Estimating a monotone density, in: Proceedings of the Conference in honor of Jerzy Neyman and Jack Kiefer, Vol. II, (Eds. L.M. Le Cam and R.A. Olshen), 539-555, Wadsworth, Inc, Belmont, California.

(1986) Some current developments in density estimation, in: Mathematics and Computer Science, CWI Monograph 1 (Eds. J.W. de Bakker, M. Hazewinkel, J.K. Lenstra), 163-192, Elsevier, Amsterdam.

(1987) Asymptotics for incomplete censored observations, Report 87-18, Mathematical Institute, University of Amsterdam.

(1988) Limit theorems for convex hulls. *Probability theory and related fields*, 79, 327-368.

(1989) Brownian motion with a parabolic drift and Airy functions. *Probability theory and related fields*, 81, 79-109.

(1991) Discussion on "Age-specific incidence and prevalence, a statistical perspective", by Niels Keiding in the *J. Royal Statistical Society*, Series A, 154, 371-412.

(1992) (with J.A. Wellner) Information bounds and nonparametric maximum likelihood estimation, Birkhäuser Verlag.

(1992) Discussion on "Empirical functional and efficient smoothing parameter selection" by Peter Hall and Iain Johnstone in the *J. Royal Statistical Society*, Series B, 54, 475-530.

(1993) (with H.P. Lopuhaä) Isotonic estimators of monotone densities and distribution functions: basic facts. *Statistica Neerlandica* vol. 47 (1993), 175–183.

(1993) Flow of the Rhine river near Lobith (in Dutch: "Afvoertoppen bij Lobith", work done by order of the Ministry of Public Works).

(1994) (with A.J. Cabo) Limit theorems for functionals of convex hulls. *Probability theory and related fields*, 100, no. 1, 31-55.

(1995) Nonparametric estimators for interval censoring, in: Analysis of Censored Data, IMS Lecture Notes-Monograph Series, Vol 27, pp. 105-128. Editors: H. L. Koul and J. V. Deshpande. Hayword.

(1995) (with G. Jongbloed) Isotonic estimation and rates of convergence in Wicksell's problem, *Annals of Statistics*, vol. 23, p. 1518-1542.

(1996) (with de P. Jong, D. Tischenko and B. van Zomeren) Computer assisted statistics education at Delft University of Technology. *Journal of Computational and Graphical Statistics*, vol. 5, pp. 386-399.

(1996) (with R.B. Geskus) Asymptotically optimal estimation of smooth functionals for interval censoring, part 1. *Statistica Neerlandica*, vol. 50, 69-88.

(1997) (with R.B. Geskus) Asymptotically optimal estimation of smooth functionals for interval censoring, part 2. *Statistica Neerlandica*, vol. 51, 201-219.

(1998) (with C. Elsinghorst, P. Jonathan, L. Smulders and P.H. Taylor) Extreme Value Analysis of North Sea Storm Severity. *Journal of Offshore Mechanics and Arctic Engineering*, vol. 120, 177-184.

(1999) (with R.B. Geskus) Asymptotically optimal estimation of smooth functionals for interval censoring, case 2. *Annals of Statistics*, vol. 27, 627-674.

(1999) (with H.P. Lopuhaä and G. Hooghiemstra) Asymptotic normality of the L_1-error of the Grenander estimator. *Annals of Statistics*, August 1999.

(1999) (with G. Jongbloed and J.A. Wellner) Integrated Brownian motion conditioned to be positive. *Annals of Probability,* vol. 27, 1283-1303.

(2000) (with D.R. Truax) A monotonicity property of the power function of multivariate tests. *Indagationes Mathematicae,* Vol. 11, 209-218.

(2001) (with J.A. Wellner) Computing Chernoff's distribution. *Journal of Computational and Graphical Statistics.* **10**, 388-400.

(2001) (with G. Jongbloed and J.A. Wellner) A canonical process for estimation of convex functions: the "invelope" of integrated Brownian motion $+ t^4$. *Annals of Statistics*, **29**, 1620-1652.

(2001) (with G. Jongbloed and J.A. Wellner) Estimation of convex functions: characterizations and asymptotic theory. *Annals of Statistics*, **29**, 1653-1698.

(2001) Ulam's problem and Hammersley's process. *Annals of Probability*, **29**, 683-690.

(2002) Hydrodynamical methods for analyzing longest increasing subsequences. *Journal of Computational and Applied Mathematics*, vol. 142, 83-105.

(2003) (with H.P. Lopuhaä and P.P. de Wolf) Kernel-type estimators for the extreme value index. Annals of Statistics, **31**, 1956-1995.

(2003) (with G. Jongbloed) Density estimation in the uniform deconvolution model, *Statistica Neerlandica*, **57**, 136-157.

(2005) (with G. Jongbloed and J.A. Wellner) Fast cone projection algorithms for inverse statistical problems. To be submitted.

(2005) (with E.A. Cator) Hammersley's process with sources and sinks. *Annals of Probability*, **33**, 879-903.

(2006) (with E.A. Cator) Second class particles and cube root asymptotics for Hammersley's process. *Annals of Probability*, **34**, no. 4, July 2006.

(2006) (with M.H. Maathuis and J.A. Wellner) Current status data with competing risks: Consistency and rates of convergence of the MLE. Submitted.

(2006) (with M.H. Maathuis and J.A. Wellner) Current status data with competing risks: Limiting distribution of the MLE. Submitted.

(2007) (with L. Aarts and G. Jongbloed) Estimating the upper support point in deconvolution. To appear in the Scandinavian journal of Statistics.

(2007) Summa cogitatio. Nieuw Archief voor Wiskunde (magazine of the Royal Dutch Mathematical Association).

(2008) (with M.H. Maathuis and J.A. Wellner) Current status data with competing risks: Consistency and rates of convergence of the MLE. Annals of Statistics **36**, 1031-1063.

(2008) (with M.H. Maathuis and J.A. Wellner) Current status data with competing risks: Limiting distribution of the MLE. Annals of Statistics **36**, 1064-1089.

(2008) (with G. Jongbloed and J.A. Wellner) The support reduction algorithm for computing nonparametric function estimates in mixture models. Scandinavian Journal of Statistics **35**, 385-399.

(2009) (with S. Donauer and G. Jongbloed) Global rate results for the MLE in a class of deconvolution models. Statistics and Probability Letters **79**, 519-524.

(2009) (with G. Jongbloed) Generalized continuous isotonic regression. Statistics and Probability Letters **80**, 248-253.

(2010) (with G. Jongbloed and B.I. Witte) Maximum smoothed likelihood estimation and smoothed maximum likelihood estimation in the current status model. Annals of Statistics, **38**, 352-387.

(2010) The maximum of Brownian motion minus a parabola. Electronic Journal of Probability, **15**, 1930-1937.

(2011) (with N.M. Temme) The tail of the maximum of Brownian motion minus a parabola. Electronic Communications in Probability, **16**, 458-466.

(2011) (with T. Ketelaars) Estimators for the interval censoring problem. Electronic Journal of Statistics, **5**, 1797-1845.

(2011) Vertices of the least concave majorant of Brownian motion with parabolic drift. Electronic Journal of Probability, **16**, 2234-2258. (scaling in part (iii) of Lemma 2.1 was corrected in Electronic Journal of Probability, (2013), vol. 18, 1-1)

(2012) Likelihood ratio type two-sample tests for current status data. Scandinavian Journal of Statistics, **39**, 645-662.

(2012) (with G. Jongbloed and B.I. Witte) Smooth plug-in inverse estimators in the current status continuous mark model. Scandinavian Journal of Statistics, **39**, 15-33.

(2012) (with G. Jongbloed and B.I. Witte) A maximum smoothed likelihood estimator in the current status continuous mark model. Journal of Nonparametric Statistics, vol. 24, 85-101.

(2012) (with G. Jongbloed) Isotonic L_2-projection test for local monotonicity of a hazard. Journal of Statistical Planning and Inference, **142**, 1644-1658.

(2012) Convex hulls of uniform samples from a convex polygon. Advances in Applied Probability, **44**, 330-342.

(2013) The bivariate current status model. Electronic Journal of Statistics, **7**, 1783–1805.

(2013) (with G. Jongbloed) Smooth and non-smooth estimates of a monotone hazard. In: From Probability to Statistics and Back: High-Dimensional Models and Processes, Festschrift for Jon Wellner, IMS Collections 9, 174-196.

(2013) (with G. Jongbloed and S. Michael) Consistency of maximum likelihood estimators in a large class of deconvolution models. Canadian Journal of Statistics, **41**, 98-110.

(2013) (with C. Durot and H.P. Lopuhaä) Testing equality of functions under monotonicity constraints. Journal of Nonparametric Statistics, **25**, 933-970.

(2013) Nonparametric (smoothed) likelihood and integral equations. Journal of Statistical Planning and Inference **143**, 2039-2078. With discussion by Geurt Jongbloed, Enno Mammen, Marloes Maathuis and Sara van de Geer.

(2013) (with G. Jongbloed) Testing monotonicity of a hazard: asymptotic distribution theory. Bernoulli Journal, **19**, 1965-1999.

(2014) Maximum smoothed likelihood estimators for the interval censoring model. Annals of Statistics, vol. 42, 2092-2137.

(2015) Chernoff's distribution and differential equations of parabolic and Airy type. (with S. Lalley and N.M. Temme)
Journal of Mathematical Analysis and Applications, 423, 1804–1824.

(2015) (with G. Jongbloed) Nonparametric confidence intervals for monotone functions. Annals of Statistics, Volume 43, Number 5 (2015), 2019-2054.

(2016) (with A.W. van der Vaart and J. van Mill) Obituary for Kobus Oosterhoff. To appear in Nieuw Archief voor Wiskunde,
http://www.nieuwarchief.nl

(2016) (with K. Hendrickx) Current status linear regression (2016), submitted.
https://arxiv.org/abs/1601.00202