

Curriculum vitae of Werner A. Stahel

Curriculum

- 1948 born September 24, 1948, in Zürich.
- 1973 Diplom (master) in mathematics, University of Zurich
- 1974-77 Assistent of Prof. H. Bula, Ecologist at the University of Zurich: Statistical Consulting for his group.
- 1977-83 Assistent of Prof. F. R. Hampel, Seminar für Statistik, Swiss Federal Institute of Technology (ETH), Zürich; Teaching assistant, consulting and research.
- 1981 Ph.D. in mathematics, ETH Zurich.
- 1983-84 Postdoctoral Member of Technical Staff at AT&T Bell Laboratories, Murray Hill, N.J., U.S.A. (2 months summer visitor at the Department of Statistics, Stanford University, Stanford, California): research in applied statistics and data analysis.
- 1984– Member of scientific staff at Seminar für Statistik, ETH Zurich: Head of the Statistical Consulting Service, Head of an extensive postgraduate course on applied statistics (Nachdiplomkurs / Weiterbildungslehrgang in angewandter Statistik), Studies Advisor of the Master in Statistics program, Teaching, Research.
- 2006 Nomination as Titular-Professor of ETH Zurich

Books

- 1986 F. R. Hampel, E. M. Ronchetti, P. J. Rousseeuw, W. A. Stahel: Robust Statistics: The Approach Based on Influence Functions. Wiley, N.Y. (Russian translation 1989).
- 1995, 1999, 2000, 2002, 2007 W. A. Stahel: Statistische Datenanalyse. Eine Einführung für Naturwissenschaftler. Editions 1-5. Vieweg, Braunschweig, Germany.

Papers in refereed journals

- 1974 H. Burla, H. Schenker, W. Stahel: Das Dispersionsmuster von Teichmuscheln (Anodonta) im Zürichsee. *Oecologia* 17, 131-40.
- 1976 H. Burla, B. Pabst, W. Stahel: Vorkommen von *Astropecten aranciatus* (Asteroidea, Echinodermata) in Abhängigkeit von Umweltbedingungen. *Helgoländer wiss. Meeresunters.* 28, 167-82.
- 1983 H. Burla, W. Stahel: Altitudinal variation in *Arianta arbustorum* (Mollusca, Pulmonata) in the Swiss Alps. *Genetica* 62, 95-108.
- 1986 B. Federer, A. Waldvogel, W. Schmid, H. H. Schiesser, F. Hampel, M. Schweingruber, W. Stahel, J. Bader, J.-F. Mezeix, N. Doras, G. D'Aubigny, G. Dermegreditchian, D. Vento: Main results of Grossversuch IV. *J. Climate Appl. Meteorology* 25, 917-957.
- 1987 W. A. Stahel: Estimation of a covariance matrix with location: Asymptotic formulas and optimal B-robust estimators. *J. Multivariate Analysis* 22, 296-312.
- 1988 L. Schaub, W. A. Stahel, J. Baumgärtner, V. Delucchi: Elements for assessing mirid (Heteroptera: Miridae) damage threshold on apple fruits. *Crop Protection* 7, 118-124.
- 1990 P. Grambsch, W. A. Stahel: Forecasting demand for special telephone services: A case study. *J. Forecasting* 6, 53-64.
- 1991 J. S. Samra, W. A. Stahel, H. Künsch: Modelling tree growth sensitivity to soil sodicity with spatially correlated observations. *Soil Science Society of America Journal* 55, 851-856
- 1992 J. Bader, W. A. Stahel, W. Schmid: Further Results of Grossversuch IV: The Effect of the First Rocket Launched into a Potential Hail Cell. *J. Applied Meteorology*, 31, 700-707.
- 1992 R. A. Maronna, W. A. Stahel, V. J. Yohai: Bias-robust estimators of multivariate scatter based on projections. *J. Multivariate Analysis*, 42, 141-161.
- 1993 A. F. Ruckstuhl, W. A. Stahel, K. Dressler: Robust Estimation of Term Values in High-Resolution Spectroscopy: Application to the $e^3\Sigma_u^+ \rightarrow a^3\Sigma_g^+$ Spectrum of T_2 . *J. Molecular Spectroscopy* 160, 434-445.
- 1994 W. A. Stahel, A. F. Ruckstuhl, K. Dressler, P. Senn: Robust Estimation in the Analysis of Complex Molecular Spectra. *J. Amer. Statist. Assoc.* 89, 788-795.
- 1995 K. Weingartner, C. Keller, W. A. Stahel, U. Baltensperger and H. Burtscher: Field Study of Emission Factors in a Road Tunnel. *Journal of Aerosol Science Suppl.*
- 1995 J. Staehelin, K. Schläpfer, T. Bürgin, U. Steinemann, S. Schneider, D. Brunner, M. Bäumle, M. Meier, C. Zahner, S. Keiser, C. Keller, W. A. Stahel: Emission factors from road traffic from a tunnel study (Gubrist tunnel, Switzerland). Part I: concept and first results. *Science Total Environment* 169, 141-147.

- 1995 S. Magyar-Lehmann, C. Savi, W. Stahel, M. Schachner: Behaviour of small inhibitory interneurons in early postnatal mouse cerebellar microexplant cultures: A video time-lapse analysis. *Europ. J. Neuroscience* 7, 1449-1459.
- 1996 H. Burla, W. Stahel: Mating variables in three native *Chymomyza* species of Switzerland (Diptera: Drosophilidae). *Mitteilungen der Schweizerischen Entomologischen Gesellschaft* 69, 173-187.
- 1996 N. D. Kalavrezos, K.W. Grätz, H.F. Sailer, W.A. Stahel: Correlation of imaging and clinical features in the assessment of mandibular invasion of oral carcinomas. *Int. J. Oral Maxillofac. Surg.* 25, 439-445.
- 1996 J. Staehelin, R. Friedrich, C. John, C. Keller, W. Stahel, K. Schläpfer: Comparison of the Emission Factors of Road Traffic from the Gubrist Tunnel Study with the IER Model. *Proc. of EUROTRAC Symp. '96, Computational Mechanics Publications, Southampton.*
- 1997 K. Weingartner, C. Keller, W. A. Stahel, H. Burtscher and U. Baltensperger: Aerosol Emission in a Road Tunnel. *Atmospheric Environment* 31, 451-462.
- 1997 M. Funk, R. Morelli, W. Stahel: Mass balance of Griesgletscher 1961 – 1994: Different methods of determination. *Zeitsch. Gletscherkunde und Glazialgeologie* 33, 41-56.
- 1997 W. A. Stahel, A. Welsh: Approaches to Robust Estimation in the Simplest Variance Components Model. *J. Statistical Planning and Inference* 57, 295-319.
- 1997 Johannes Staehelin, Christian Keller, Werner A. Stahel, Kurt Schläpfer, Urs Steinemann, Toni Bürgin, Stefan Schneider: Modelling Emission Factors of Road Traffic from a Tunnel Study. *Environmetrics* 8, 219-239.
- 1998 Johannes Staehelin, Christian Keller, Werner A. Stahel, Kurt Schläpfer, Samuel Wunderli: Emission factors from road traffic from a tunnel study (Gubrist tunnel, Switzerland). Part III: Results of organic compounds, SO₂ and speciation of organic exhaust emission. *Atmospheric Environment* 32, 999-1009.
- 1999 Astrid Oberson, D.K. Friesen, H. Tiessen, C. Morel, W. Stahel: Phosphorus status and cycling in native savanna and improved pastures on an acid low-P Colombian Oxisol. *Nutrient Cycling in Agroecosystems* 55, 77-88.
- 2001 E. Limpert, W. A. Stahel, M. Abbt: Log-normal Distributions across the Sciences: Keys and Clues. *BioScience* 51, 341-352.
- 2001 M. Riediker, C. Monn, T. Koller, W. A. Stahel, B. Wüthrich: Air pollutants enhance rhinoconjunctivitis symptoms in pollen-allergic individuals. *Annals of Allergy, Asthma, & Immunology* 87, 311-318.
- 2001 R. Gehrig, C. Hüglin, W. Devos, P. Hofer, J. Kobler, W. A. Stahel, U. Baltensberger, C. Monn: Contribution of road traffic to ambient fine particle concentrations (PM₁₀) in Switzerland. *Int. J. Vehicle Design*, 27, 55-64.

- 2001 J. Staehelin, R. Locher, S. Mönkeberg, W. A. Stahel: Contribution of road traffic emissions to ambient air concentrations of hydrocarbons: the interpretation of monitoring measurements in Switzerland by Principal Component Analysis and road tunnel measurements. *Int. J. Vehicle Design*, 27, 161-172.
- 2002 Roman W. Lutz, Werner A. Stahel, Werner K. Lutz: Statistical procedures to test for linearity and estimate threshold doses for tumor induction with non-linear dose-response relationships in bioassays for carcinogenicity. *Regulatory Toxicology and Pharmacology* 36, 331-337.
- 2004 Werner A. Stahel: Purposes and strategies in regression analysis. *J. Statistical Planning and Inference* 122, 175-186.
- 2004 Patrick Gomez, Werner A. Stahel, Brigitta Danuser: Respiratory Responses during Affective Picture Viewing. *Biological Psychology* 67, 359-373.
- 2005 Christina A. Colberg, Bruno Tona, Giovanni Catone, Christian Sangiorgio, Werner A. Stahel, Peter Sturm, Johannes Staehelin: Statistical analysis of the vehicle pollutant emissions derived from several European road tunnel studies. *Atmospheric Environment* 39, 2499-2511.
- 2005 Christina A. Colberg, Bruno Tona, Werner A. Stahel, Markus Meier, Johannes Staehelin: Comparison of a road traffic emission model (HBEFA) with emissions derived from measurements in the Gubrist road tunnel, Switzerland. *Atmospheric Environment* 39, 4703-4714.
- 2005 Antoine Pralong, Christof Birrer, Werner A. Stahel, and Martin Funk: On the predictability of ice avalanches. *Nonlinear Processes in Geophysics* 12, 849-861.
- 2005 M. Wolbers, W. A. Stahel: Linear Unmixing of Multivariate Observations: A Structural Model. *J. Amer. Statist. Assoc.* 100, 1328-1342.
- 2006 Simon Egli, Martina Peter, Christoph Buser, Werner Stahel, Francois Ayera: Mushroom picking does not impair future harvests – results of a long-term study in Switzerland. *Biological Conservation* 129, 271-276
- 2006 Whrnschimmel, H., Mrquez, C., Mugca, V., Stahel, W. A., Staehelin, J., Crdenas, B., Blanco, S.: Vertical profiles and receptor modeling of volatile organic compounds over Southeastern Mexico City. *Atmospheric Environment* 40, 5125-36
- 2007 Rahel C. Brndli, Thomas D. Bucheli, Thomas Kupper, Reinhard Furrer, Werner A. Stahel, Franz X. Stadelmann and Joseph Tarradellas: Organic pollutants in compost and digestate. Part 1. Polychlorinated biphenyls, polycyclic aromatic hydrocarbons and molecular markers. *J. Environmental Monitoring* 9, 456-64
- 2007 Mder, J. A., J. Staehelin, D. Brunner, W. A. Stahel, I. Wohltmann, and T. Peter: Statistical modeling of total ozone: Selection of appropriate explanatory variables, *J. Geophys. Res.*, 112

- 2007 Dejung, S., Martin Wegelin, Ivan Fuentes, Gabriela Almanza, Ruth Jarro, Lizeth Navarro, Gina Arias, Evelin Urquieta, Abraham Torrico, Wilma Fernandez, Mercedes Iriarte, Christof Birrer and Werner A. Stahel: Effect of solar water disinfection (SODIS) on model microorganisms under improved and field SODIS conditions. *J. Water Supply Res. Technology (AQUA)* 56 (4), 245-256
- 2008 E. Limpert, J. Burke, C. Galan, M. del Mar Trigo, J. S. West, W. A. Stahel: Data, not only in aerobiology: how normal is the normal distribution? *Aerobiologia* 24, 121-124.
- 2009 M. Brink, M. Basner, C. Schierz, M. Spreng, K. Scheuch, G. Bauer, W.A. Stahel: Determining physiological reaction probabilities to noise events during sleep. *Somnologie* 2009, p. 236-243.
- 2010 H. Wöhrnschimmel, M. Magana, W.A. Stahel, S. Blanco, S. Acuna, J. M. Perez, S. Gonzalez, V. Gutierrez, S. Wakamatsu, and B. Cardenas: Measurements and receptor modeling of volatile organic compounds in south-eastern Mexico City, 2000-2007. *Atmos. Chem. Phys. Discuss.*, 10, 127, 2010

Books edited

- 1991 W. A. Stahel, S. Weisberg, eds.: *Directions in Robust Statistics and Diagnostics*. Springer, N.Y.
- 1993 S. Morgenthaler, E. Ronchetti, W. A. Stahel, eds.: *New Directions in Statistical Data Analysis and Robustness*. Birkhäuser, Basel.
- 2000 Luisa Turrin Fernholz, Stephan Morgenthaler, Werner Stahel, eds.: *Statistics in Genetics and in the Environmental Sciences*. Birkhäuser, Basel.

Non-refereed papers

- 1981 Robuste Schätzungen: Infinitesimale Optimalität und Schätzungen von Kovarianzmatrizen. Ph.D. thesis no. 6881, Swiss Federal Institute of Technology (ETH), Zürich.
- 1981 Breakdown of covariance estimators. Res. Rep. 31, Fachgruppe für Statistik, Swiss Federal Institute of Technology (ETH), Zürich, Zürich.
- 1982 F. Hampel, A. Marazzi, E. Ronchetti, P. Rousseeuw, W. Stahel, R. Welsch: *Robust Statistical Methods*. Handouts for an instructional meeting held in Palermo, 10-11 September, 1982, in connection with the 15th European Meeting of Statisticians. Similar short courses in Chicago, American Statistical Association Annual Meeting 1986, and in Schloss Reisensburg, BRD, European Courses in Advanced Statistics (ECAS), 1989.
- 1983 F. Hampel, M. Schweingruber, W. Stahel: Das Ergebnis des konfirmatorischen Tests im Grossversuch IV zur Hagelabwehr. Res. Rep. 35, Fachgruppe für Statistik, ETH, Zürich.

- 1989 W. A. Stahel: Robust statistics: From an intellectual game to a consumer product. IMA Preprint Series # 580, Institute for Mathematics and Its Applications (IMA), University of Minnesota, Minneapolis, U.S.A.
- 1989 W. A. Stahel: On strategies in regression. Manuscript.
- 1991 W. A. Stahel: Research directions in robust statistics. In: Stahel and Weisberg, eds.: Directions in Robust Statistics and Diagnostics. Springer, N.Y.
- 1991 M. Markatou, W. A. Stahel, E. Ronchetti: Robust M-type testing procedures for linear models. In: Stahel and Weisberg, eds.: Directions in Robust Statistics and Diagnostics. Springer, N.Y.
- 1991 V. Yohai, R. Zamar, W. A. Stahel: A procedure for robust estimation and inference in linear regression. In: Stahel and Weisberg, eds.: Directions in Robust Statistics and Diagnostics. Springer, N.Y.
- 1992 W. A. Stahel, P. Hartmann: M-type Tests in Linear Models: Some Comments on Studentizing, and a Small Simulation. In: L_1 -Statistical Analysis and Related Methods. Y. Dodge, ed., North Holland, Amsterdam.
- 1994 W. A. Stahel und C. Keller: Schadstoffmessungen im Gubristtunnel: Bestimmung von Emissionsfaktoren. Kapitel IX von J. Staehelin und K. Schläpfer: Erfassung von Emissionen des Kraftfahrzeugverkehrs mittels Messungen im Gubristtunnel (Projekt im EUROTRAC-Subprojekt GENEMIS)
- 1997 W. Stahel: Robust Alternatives to Least Squares. In: Ciarlini, Cox, Pavese, Richter eds. Advanced Mathematical Tools in Metrology III. World Scientific, Singapore.
- 1999 Lisa Pritscher, Werner Stahel, Peter de Haan: Emissionsfaktoren im Strassenverkehr: Betrachtungen zu Prüfstandsmessungen der EMPA. BUWAL, Bern.
- 2000 J. Staehelin, W. A. Stahel: Statistical Modelling to Answer Key Questions in Atmospheric Chemistry: Three Case Studies. In: L. Turrin Fernholz, S. Morgenthaler, W. Stahel, eds.: Statistics in Genetics and in the Environmental Sciences. Birkhäuser, Basel.
- 2001 Werner Stahel: On Strategies in Regression Analysis. Research Report 100, Seminar für Statistik, ETH Zürich.
- 2002 C. Hüglin, W. Devos, R. Gehrig, W. A. Stahel, M. Wolbers: Source apportionment of PM10 and PM25 in Switzerland by combining a graphical source identification method and a linear unmixing algorithm. Submitted to Atmospheric Environment
- 2003 E. Limpert, W. A. Stahel: Das Leben ist multiplikativ – neue Aspekte zur Verteilung von Daten. Bericht ber die Arbeitstagung 2002 der Vereinigung der Pflanzenzchter und Saatgutkaufleute Österreichs, 26.-28. Nov. 2002, Gumpenstein. p. 15-22. Bundesanstalt fr alpenlndische Landwirtschaft Gumpenstein, Austria.
- 2006 M. Tableman, W. A. Stahel: Nonparametric Methods to Analyze Termination Time with Competing Risks. Research Report, Seminar für Statistik, ETH Zürich.

Talks

- 1979 Hampel's optimality result: Generalization to "admissible" estimators and standardizations. Contributed paper, 12th Europ. Meeting of Statisticians, Varna, Bulgarien.
- 1981 Breakdown of robust covariance matrix estimators. Contributed paper, 14th Europ. Meeting of Statisticians, Wroclaw, Poland.
- 1986 W. A. Stahel, P. Grambsch: Modelling special service demand by independent stable increments. Invited paper, 6th International Symposium on Forecasting, Paris.
- 1988 W. A. Stahel, J. Bader: Confidence intervals from randomization tests with robust M-type test statistics. Contributed paper, 18th European Meeting of Statisticians, Berlin, DDR.
- 1991 W. A. Stahel: Statistical Computing Environments: What's next? Invited Paper, STATCOMP / BIOSTATS Conference, Coolangatta, Queensland, Australia, 7/1/1991.
- 1991 W. A. Stahel: Robust Tests for Regression. Contributed Paper, 19th EMS, Barcelona, 9/5/1991.
- 1992 W. A. Stahel, P. Hartmann: M-type Tests in Linear Models: Some Comments on Studentizing, and a Small Simulation. Invited talk, Second International Conference on Statistical Data Analysis based on the L_1 -norm and Related Methods, Neuchâtel, Switzerland, August 17-20, 1992.
- 1994 W. A. Stahel: Notes on Rendering Data Analysis More Efficient. Invited talk, XXVI-ième Journées de Statistique de l'Association pour la Statistique et ses Utilisations, Neuchâtel, Switzerland.
- 1994 W. A. Stahel and A. Welsh: Approaches to Robust Estimation of Variance Components. Invited talk, Symposium on Future Directions in Robust Methods and Data Analysis, Princeton, June 26 - July 2, 1994
- 1995 W. A. Stahel: Robuste Regression und Varianzanalyse: Wo stehen wir? Meeting of the ROeS section of the International Biometric Society, Rapperswil, Switzerland, September 25-29, 1995.
- 1996 W. Stahel, S. Mönkeberg, R. Kegel: Factor Analytic Models for Air Pollution Data. Preliminary results of a case study. Contributed paper, meeting on Environmental Statistics and Earth Sciences, Brno, Czech Republic, August 20-24, 1996.
- 1996 W. Stahel, S. Mönkeberg, R. Kegel, J. Staehelin. Factor Analytic Models for Identifying Sources of Air Pollution. Preliminary Results of a Case Study. Contributed paper, Statistical Science - A Conference in honor of Stefano Franscini, Ascona, Switzerland, Nov 18-20, 1996
- 1997 W. Stahel: Multivariate Daten handlich machen durch Dimensionsreduktion. Vortrag am Institut für Statistik, Ludwig-Maximilians-Universität, München, 16. Mai 1997.

- 1997 Robust Methods in Analysis of Variance and Regression. Invited talk, Second Berlin Colloquium on Statistical and Mathematical Modelling in the Fields of Food Science, Biotechnology and Environment. Berlin, Oct 7–10, 1997.
- 2001 On Strategies in Regression Analysis. Invited talk, Conference on “Contemporary Data Analysis: Theory and Practice”, Buenos Aires, March 5-9, 2001.
- 2002 Contributions of statistical regression and design of experiments to calibration. Workshop on Calibration Techniques for In-Situ Plasma Instrumentation. Bern, Oct 1, 2002.
- 2002 Exploratory Analyses of Test Cycle Data. Artemis Statistical Workshop, Ispra, Nov. 26, 2002.
- 2006 Linear Mixing Models: an Introduction with an Application to Air Pollution. Université de Neuchâtel, April 18, 2006.