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Mathematics Library News 7

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Most-cited Statistics Articles, 1981-2010

Most highly-cited articles in Web of Science in journals classified as "Statistics and Probability" in Journal Citation Reports (top 100 journals by 5-year impact factor)	Current Index to Statistics keywords	Citations 1981-2010, counted Nov. 12, 2010
1. Liang, K.Y. and Zeger, S.L., Longitudinal data analysis using generalized linear models, <i>Biometrika</i> 73 (1986)	Repeated measures	6117
2. Engle, R.F. and Granger, C.W.J., Cointegration and error correction: representation, estimation, and testing, <i>Econometrica</i> 55 (1987)		4409
3. Engle, R.F., Autoregressive conditional heteroscedasticity with estimates of the variance of United Kingdom inflation, <i>Econometrica</i> 50 (1982)		3126
4. Zeger, S.L. and Liang, K.Y., Longitudinal data analysis for discrete and continuous outcomes, <i>Biometrics</i> 52 (1986)	Quasi likelihood; Repeated measures; Generalized linear model	3082
5. Laird, N.M. and Ware, J.H., Random effects models for longitudinal data, <i>Biometrics</i> 38 (1982)	Variance components; Repeated measurements; Empirical Bayes; EM algorithm	3007
6. Guo, S.W. and Thompson, E.A., Performing the exact test of Hardy-Weinberg proportion for multiple alleles, <i>Biometrics</i> 48 (1992)	Goodness-of-fit; Genetics	2517
7. Newey, W.K. and West, K.D., Simple positive semi-definite heteroskedasticity and autocorrelation consistent covariance matrix, <i>Econometrica</i> 55 (1987)		2426

Most highly-cited articles in Web of Science in journals classified as "Statistics and Probability" in Journal Citation Reports (top 100 journals by 5-year impact factor)	Current Index to Statistics keywords	Citations 1981-2010, counted Nov. 12, 2010
8. Rosenbaum, P.R. and Rubin, D.B., Central role of the propensity score in observational studies for causal effects, <i>Biometrika</i> 70 (1983)	Discriminant matching; Matched sampling	2409
9. Gelfand, A.E. and Smith, A.F.M., Sampling-based approaches to calculating marginal densities, <i>J. of the Amer. Stat. Assoc.</i> 85 (1990)	Stochastic substitution; Gibbs sampler; sampling-importance-resampling algorithm	2183
10. Hansen, L.P., Large sample properties of generalized method of moments indicators, <i>Econometrica</i> 50 (1982)		2174
11. Donoho, D.L. and Johnstone, I.M., Ideal spatial adaptation by wavelet shrinkage, <i>Biometrika</i> 81 (1994)	Minimax; Spline	2160
12. Irizarry, R.A., Hobbs, B. Collin, F., Beazer-Barclay, Y.D., Antonellis, K.J., Scherf, U., and Speed, T.P., Exploration, normalization, and summaries of high density oligonucleotide array probe level data, <i>Biostatistics</i> 4 (2003)	Armitage-Doll model; Mechanistic cancer model; Multistage model; Mutations and cancer; Radiation and cancer; Smoking and cancer	2156
13. Kass, R.E. and Raftery, A.E., Bayes factors, <i>Journal of the American Statistical Association</i> 90 (1995)	Hypothesis testing; Importance sampling; Markov chain Monte Carlo; Model selection	2139
14. Dickey, D.A. and Fuller, W.A., Likelihood ratio statistics for autoregressive time series with a unit root, <i>Econometrica</i> 49 (1981)		1943
15. Conover, W.J. and Iman, R.L., Rank transformations as a bridge between parametric and nonparametric statistics, <i>American Statistician</i> 35 (1981)	Design of experiments; Discriminant analysis; Multiple comparisons	1857
16. Phillips, P.C.B. and Perron, P., Testing for a unit root in time series regression, <i>Biometrika</i> 75 (1988)	Brownian motion	1788
17. DeLong, E.R., DeLong, D.M., and Clarke-Pearson, D.I., More correlated receiver operating characteristic curves: a nonparametric approach, <i>Biometrics</i> 44 (1988)	Mann-Whitney test; U-statistic	1778
18. Johansen, S. and Juselius, K., Maximum likelihood estimation and inference on cointegration with applications to the demand for money, <i>Oxford Bulletin of Economics and Statistics</i> 52 (1990)		1750
19. Harrell, F.E., Lee, K.L., and Mark, D.B., Multivariable prognostic models: issues in developing models, evaluating assumptions and adequacy, and measuring and reducing errors, <i>Statistics in Medicine</i> 15 (1996)	Regression; Survival analysis; prediction	1512
20. Higgins, J.P.T., Thompson, S.G., Quantifying heterogeneity in a meta-analysis, <i>Statistics in Medicine</i> 21 (2002)	systematic review methodology	1498

Most-cited Mathematics Articles, 1981-2010

Most highly-cited articles in Web of Science in journals classified as "Mathematics" in Journal Citation Reports (top 150 journals by 5-year impact factor)	AMS field and MSC subject	Citations 1981-2010, counted Nov. 10, 2010
1. Daubechies, I., Orthonormal bases of compactly supported wavelets, <i>Comm. on Pure and Applied Math.</i> 41 (1988)	Analysis 42	3007
2. Karmarkar, N., New Polynomial-time algorithm for linear programming, <i>Combinatorica</i> 4 (1984)	Applied 90	1286
3. Mumford, D. and Shah, J., Optimal approximations by piecewise smooth function and associated variational problems, <i>Comm. on Pure and Applied Math.</i> 42 (1989)	Linear, non-linear, optim./contrl 49	1151
4. Crandall, M.G., Ishii, H., and Lions, P.L., Users' guide to viscosity solutions of 2nd order partial differential equations, <i>Bull. Amer. Math. Soc.</i> 27 (1992)	Diff., integral, diff. eqs. 35	1086
5. Hutchinson, J.E., Fractals and self-similarity, <i>Indiana University Math. J.</i> 30 (1992)	Linear, non-linear, optim./contrl. 49	1037
6. Mallat, S.G., Multiresolution approximations and wavelet orthonormal bases of $L_s(\mathbb{R})$, <i>Trans. Amer. Math. Soc.</i> 315 (1989)	Analysis 42	982
7. Cohen, A., Daubechies, I., and Feauvea, J.C., Biorthogonal bases of compactly supported wavelets, <i>Comm. on Pure and Applied Math</i> 45 (1992)	Analysis 42	961
8. Crandall, M.G., and Lions, P.L., Viscosity solutions of Hamilton-Jacobi equations, <i>Trans. Amer. Math. Soc.</i> 277 (1983)	Diff., integral, diff. eqs. 35	887
9. Brezis, H. and Nirenberg, L., Positive solutions of nonlinear elliptic equations involving critical Sobolev exponents, <i>Comm. on Pure and Applied Math.</i> 36 (1983)	Diff., integral, diff. eqs. 35	853
10. Lenstra, A.K., Lenstra H.W., and Lovasz, L., Factoring polynomials with rational coefficients, <i>Math. Annalen</i> 261 (1982)	Algebra/number theory 12	723
11. Beylkin, G., Coifman, R., and Rokhlin, V., Fast wavelet transforms and numerical algorithms I, <i>Comm. on Pure and Applied Math.</i> 44 (1991)	Numerical analysis 65	716
12. Jones, V.F.R., Polynomial invariant for knots via von Neumann algebras, <i>Bull. Amer. Math. Soc.</i> 12 (1985)	Geometry/topology 57	642
13. Gromov, M. Pseudo-holomorphic curves in symplectic manifolds, <i>Invent. Math.</i> 82 (1985)	Geometry/topology 53	632
14. Simon, B., Schrödinger semigroups, <i>Bull. Amer. Math. Soc.</i> 7 (1982)	Applied 81	602
15. Alchourron, C.E., Gardenfors, P., and Makinson, D., On the logic of theory change: partial meet contraction and revision functions, <i>Journal of Symbolic Logic</i> 50 (1985)	Discrete 3	585
16. Jones, V.F.R., Index for subfactors, <i>Invent. Math.</i> 72 (1983)	Analysis 46	563
17. Thurston, W.P., Three dimensional manifolds, Kleinian groups and hyperbolic geometry, <i>Bull. Amer. Math. Soc.</i> 6 (1982)	Geometry/topology 57	550
18. Jimbo, M. and Miwa, T., Solitons and infinite dimensional Lie algebras, <i>Pub of Res. Inst. for Math. Sci.</i> 19 (1983)	Geometry/topology 58	543
19. Puri, M.L. and Ralescu, D.A., Fuzzy random variables, <i>J. of Math Anal. and Applications</i> 114 (1986)	Discrete 3	532
20. Witten, E., Supersymmetry and Morse theory, <i>J. of Diff. Geom.</i> 15 (1982)	Geometry/topology 58	523