

Last revised: November 2009

## **Two-phase, Switching, Change-point regressions and Mixture Models** (51 entries)

1. Quandt, R.E. 1958. The estimation of the parameters of a linear regression system obeying two separate regimes. *JASA*: 873 – 880
2. Quandt, R.E. 1960. Tests of the hypothesis that a linear regression system obeys two separate regimes. *JASA*: 324 – 330
3. Sprent, P. 1961. Some hypothesis concerning two-phase regression lines. *Biometrics* 7: 634 – 645
4. Robinson, D.E. 1964. Estimates for the points of intersection of two polynomial regressions. *American Statistical Association Journal*: 214 – 224
5. Hudson, D.J. 1966. Fitting segmented curves whose join points have to be estimated. *JASA* (61): 1097 – 1129
6. Hinkley, D.V. 1969. Inference about the intersection in two-phase regression. *Biometrika* 56(3): 495 – 504
7. Bacon, D.W. 1971. Estimating the transition between two intersecting straight lines. *Biometrika* 58(3): 525 – 534
8. Hinkley, D.V. 1971. Inference in two-phase regression. *Journal of the American Statistical Association* 66(336): 736 – 743
9. Quandt, R.E. 1972. A new approach to estimating switching regressions. *Journal of the American Statistical Association* 67(338): 306 – 310
10. Gallant, A.R. and Fuller, W.A. 1973. Fitting segmented polynomial regression models whose join points have to be estimated. *Journal of the American Statistical Association* 68(341): 144 – 147
11. Watts, D.G. and Bacon, D.W. 1974. Using an hyperbola as a transition model to fit two-regime straight –line data. *Technometrics* 16(3): 369 – 373
12. Feder, P.I. 1975. On asymptotic distribution theory in segmented regression problems identified case. *The Annals of Statistics* 3(1): 49 – 83
13. Feder, P.I. 1975. The log likelihood ratio in segmented regression. *The Annals of Statistics* 3(1): 84 – 97

14. Swamy, P.A.V.B. and Mehta, J.S. 1975. Bayesian and Non-Bayesian analysis of switching regressions and of random coefficient regression models. *JASA* 70(351): 593 – 602
15. Titterington, D.M. 1976. Updating a diagnostic system using unconfirmed cases. *Appl. Statist.* 25(3): 238 – 247
16. Kiefer, N.M. 1978. Discrete parameter variation: Efficient estimation of a switching regression model. *Econometrica* 46(2): 427 – 434
17. Quandt, R.E. and Ramsey, J.B. 1978. Estimating mixtures of normal distributions and switching regressions. *JASA* 73(364): 730 –
18. Beckman, R.J. and Cook, R.D. 1979. Testing for two-phase regressions. *Technometrics* 21(1): 65 – 69
19. Aitkin, M. and Wilson, G.T. 1980. Mixture models, outliers, and the EM Algorithm. *Technometrics* 22(3): 325 – 331
20. Binkley, C.S. and Miller, R.S. 1980. Survivorship of the whooping crane, *Grus Americana*. *Ecology* 61(2): 434 - 437
21. Binkley, C.S. and Miller, R.S. 1980. Population characteristics of the whooping crane *Grus Americana*.
22. Shaban, S.A. 1980. Change point problem and two-phase regression: an Annotated Bibliography. *International Statistical Review* 48: 83- 93.
23. Hinkley & T. Gregoire Corresp. 1983. Correspondence on two-phase regression.
24. Jones, R. and Molitoris, B.A. 1984. A statistical method for determining the breakpoint of two lines. *Analytical Biochemistry* 141: 287 – 290
25. Chappell, R. 1989. Fitting bent lines to data, with applications to allometry. *J. theor. Boil.* 138: 235 – 256
26. Kim, H. and Segmund, D. 1989. The Likelihood ratio test for a change-point in simple linear regression. *Biometrika* 76(3): 409 – 423
27. Titterington, D.M. 1990. Some recent research in the analysis of mixture distributions. *Statistics* 21(4): 619 – 641
28. Jones, R. H. and Dey, I. 1995. Determining one or more change points. *Chemistry and Physics of Lipids* 76: 1 – 6

29. Küchenhoff, H. and Carroll, R.J. 1995. Segmented regression with errors in predictors: semiparametric and parametric methods.
30. Aitkin, M. and Aitkin, I. 1996. A hybrid EM/Gauss-Newton algorithm for maximum likelihood in mixture distributions. *Statistics and Computing* 6: 127 - 130
31. Feng, Z.D. and McCulloch, C.E. 1996. Using bootstrap likelihood ratios in finite mixture models. *Journal of the Royal Statistical Society* 58(3): 609 – 617
32. Van Norden, S. and Vigfusson, R. 1996. Regime-switching models: A guide to the Bank of Canada Gauss Procedures. Working Paper 96-3.
33. Schroder, U. and Sondgerath, D. 1996. The concept of biological time for computing the switching points of a growth model for winter wheat. *Ecological Modelling* 88: 1- 8
34. Young, D.A. and Zamudio, S. 1997. Breakpoint determination for repeated measures data using a nonlinear stochastic parameter model.
35. Titterton, D.M. 1997. Mixture Distribution (Update). Encyclopedia of Statistical Sciences: Update Volume 1. John Wiley & Sons, Inc.
36. Courbet, F. 1999. A three-segmented model for the vertical distribution of annual ring area: Application to *Cedrus atlantica* Menetti. *Forest Ecology and Management* 119: 177 – 194
37. Jeffries, N. and Pfeiffer, R. 2000. A mixture model for the probability distribution of rain rate. *Environmetrics* 12: 1- 10
38. Turner, T.R. 2000. Estimating the propagation rate of a viral infection of potato plants via mixtures of regressions. *Appl. Statist.* 49(3): 371 - 384
39. Liu, C., Zhang, L., Davis, C.J., Solomon, D.S., and Gove, J.H. 2001. A finite mixture of two Weibull distributions for modeling the diameter distributions of rotated-sigmoid, uneven-aged stands. *Can. J. For. Res.* 31: 1654 – 1659
40. Liu, C., Zhang, L., Davis, C.J., Solomon, D.S., and Gove, J.H. 2002. A finite mixture model for characterizing the diameter distributions of mixed-species forest stands. *Forest Science* 48(4): 653 – 661
41. Krieger, A.M., Pollak, M., and Yakir, B. 2003. Surveillance of a simple linear regression. *Journal of the American Statistical Association* 98(462): 456 –
42. Muggeo, V.M.R. 2003. Estimating regression models with unknown break-points. *Statistics in Medicine* 22: 3055 – 3071

43. Wright, D.E. and Bray, I. 2003. A mixture model for rounded data. *The Statistician* 52(1): 3-13
44. Chung, H., Loken, E., and Schafer, J.L. 2004. Difficulties in drawing inferences with finite-mixture models: A simple example with a simple solution. *The American Statistician* 58(2): 152 – 158
45. Gijbels, I. and Goderniaux, A. 2004. Bandwidth selection for changepoint estimation in nonparametric regression. *Technometrics* 46(1): 76 – 86
46. Kim, H., Fay, M.P., Yu, B., Barrett, M.J., and Feuer, E.J. 2004. Compatibility of segmented line regression models. *Biometrics* 60: 1005 – 1014
47. Hall, D.B. and Wang, L. 2005. Two-component mixtures of generalized linear mixed effects models for cluster correlated data. *Statistical Modelling* 5: 21 – 37
48. Chiu, G., Lockhart, R., and Routledge, R. 2006. Bent-cable regression theory and applications. *Journal of the American Statistical Association* 101(474): 542 –
49. Jandhyala, V.K. and Fotopoulos, S.B. 2007. Estimating the unknown change point in the parameters of the lognormal distribution. *Environmetrics* 18: 141 – 155
50. Muggeo, V.M.R. 2008. Modeling temperature effects on mortality: multiple segmented relationships with common break points. *Biostatistics*: 1- 8
51. Muggeo, V.M.R., Attanasio, M. and Porcu, M. 2009. A segmented regression model for event history data: an application to the fertility patterns in Italy. *Journal of Applied Statistics* 36(9): 973 – 988