

Residual Partial Sums techniques to find change-points in linear regression

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In practice it is popular to investigate the partial sums of the least squares residuals to look for change-points in linear regression. The partial sums of the least squares residuals can be injectively embedded into the class of continuous functions. These continuous functions are called residual partial sums process. If the number of observations is large enough a Gaussian process can be considered as approximation of the residual partial sums process. This process can be used to establish non-parametric tests of Cramér-von Mises and Kolmogorov-Smirnov type to test for a change-point in linear regression. In this talk the theory is illustrated by data from a company and by several simulations.