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TEST FOR DIFFERENCES BETWEEN M-ESTIMATES OF NON-LINEAR REGRESSION MODEL

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Abstract: For two M-estimates of the regression model (evaluated for the same data) a test of difference between them is proposed. An asymptotic representation of $\sqrt{n}(\hat{\beta}^{(n)} - \beta^0)$ was used as a key tool for the construction of the test. If the difference is classified as significant, it indicates that something does not correspond with the framework under which the consistency was derived. As the conditions for the consistency and the asymptotic normality of the estimates have a statistical character, it may mean that for the samples of finite sizes one ϱ-function at least was not appropriate for the given data, so that the asymptotics does not yet work. This implies that at least one of our estimates may be rather far from the "true" model.

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