ESTIMATION OF PARAMETERS OF THE REGRESSION FUNCTION

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The aim of this report is to analyse properties of the least square estimator of parameters of the regression function. Given a set of points in the plain a regression function should be fitted. We consider the model of the ellipse which as a perspective projection of a circle is in very often technical use. This problem could be solved using algebraic least square method (sometimes called orthogonally-regression method) but our method of the estimation allows deeper investigation of mathematical properties of this model. We study the estimation of vertices, the centre of the ellipse and their confidence regions. We prove that the estimation method is equivalent to the orthogonally-regression method.