

Tests in Weakly Nonlinear Regression Model *

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(Received May 25, 2004)

Abstract

In weakly nonlinear regression model a weakly nonlinear hypothesis can be tested by linear methods if an information on actual values of model parameters is at our disposal and some condition is satisfied. In other words we must know that unknown parameters are with sufficiently high probability in so called linearization region. The aim of the paper is to determine this region.

Key words: Regression model, nonlinear hypothesis, linearization.

2000 Mathematics Subject Classification: 62F03, 62J05

0 Introduction

A nonlinear hypothesis on model parameters in nonlinear regression model can be tested by linear methods if some conditions are satisfied. This condition is given in the form of the inclusion $\mathcal{E} \subset \mathcal{L}_T$ which must occur with sufficiently high probability. Here \mathcal{E} is the $(1-\alpha)$ -confidence region of the model parameters (for sufficiently small α) and \mathcal{L}_T is a special set in parameter space. The aim of the paper is to determine the set \mathcal{L}_T (linearization region).

*Supported by the Council of Czech Government J14/98:153 1000 11.