Bárdossy, András
Note on fuzzy regression. (English) Zbl 0719.62086
Fuzzy Sets Syst. 37, No. 1, 65-75 (1990).

This note is strongly related to the Tanaka-approach to fuzzy regression [see, e.g., *H. Tanaka* and *J. Watada*, Fuzzy sets Syst. 27, No.3, 275-289 (1988; Zbl 0662.93066)]. The problem is to find a fuzzy regression function f(x,a) generated by a fuzzy parameter a which covers, on the one hand, all fuzzy data $y_1, ..., y_T$ at least to a given degree h and the vagueness of which is, on the other hand, as small as possible. Whereas Tanaka et al. have considered linear regression and a special vagueness criterion, the author formulates this problem for nonlinear setups and several measures of vagueness.

Under several additional assumptions on f(x,a) (continuity, monotonicity, linearity) he finds the associated programming problems which simplify to linear ones in the case of linear regression. Two numerical examples are given.

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MSC:

62J99	Linear inference, regression
62J02	General nonlinear regression
03E72	Theory of fuzzy sets, etc.
90C90	Applications of mathematical programming

Cited in **20** Documents

Keywords:

nonlinear programming; fuzzy regression; measures of vagueness

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