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## ABSTRACT

# A LINEAR REGRESSION MODEL WITH FUZZY FUNCTIONS

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Fuzziness must be considered in systems where human estimation is influential. Even if inputs are not fuzzy, outputs may become fuzzy because of fuzziness of system equation. In the background of usual regression model, deviations between the observed values and the estimated values are supposed to be due to the measurement errors. On the contrary it is assumed in our paper that these deviations depend on indefiniteness of system structure, which can be grasped by the concepts of possibility, that is fuzzy sets.

We regard these deviations as the fuzziness of parameters of system. Thus these deviation is reflected in a fuzzy linear function which is used as a linear model in a fuzzy environment. As an example of this problem, we have got the fuzzy linear model which explains a price mechanism of prefabricated house. The fuzzy parameter of linear model obtained by our method means a possibility distribution, which corresponds to fuzziness of the system. This fuzzy regression model might be very useful for finding out a fuzzy system structure like an evaluation system.