Nonparametric Models for Trend Evolution of Precipitation in the Dobrudja Region

Alina Barbulescu (1) and Judicaël Deguenon (2)

(1) Ovidius University of Constanta, Romania, (2) Ecole Polytechnique d'Abomey – Calavi de l'Université d'Abomey – Calavi, BENIN

Nonparametric regression analysis traces the dependence of a response variable on one or several predictors without specifying in advance the function that relates the predictors to the response.

In this article we discuss several methods of nonparametric regression, including kernel estimation, local polynomial regression, smoothing splines and wavelets, in the case of one predictor, applied to the annual and monthly precipitations over the Dobroudja region (Romania), between 1965 and 2005.

The methods have been implemented in R, and are of general application of nonparametric regression problems.