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DISCUSSION

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1. Introduction. We describe the multivariate adaptive polynomial synthesis (MAPS) method of multivariate nonparametric regression and compare it to the multivariate adaptive regression spline (MARS) method of Friedman (1990). Both MAPS and MARS are specializations of a general multivariate regression algorithm that builds hierarchical models using a set of basis functions and stepwise selection. We compare polynomial and spline bases in this context. Our experience is that there is no substantial difference in the statistical accuracy for the data sets that we have investigated, provided that some care is taken in the choice of the model selection criterion. It is argued that the polynomial methods, with a smaller set of basis functions to select from at each step, should yield a computationally faster algorithm.