Semi-Recursive Kernel Estimation of Production Functions and their Characteristics

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A class of semi-recursive kernel type estimates of functions depending on multivariate density functionals and their derivatives is considered. The piecewise smoothed approximations of these estimates are proposed. The convergence with probability one of the estimates is proved. The main parts of the asymptotic mean square errors of the estimates are found. The examples of estimation of the production function, the marginal productivity and the marginal rate of technical substitution of inputs are given.