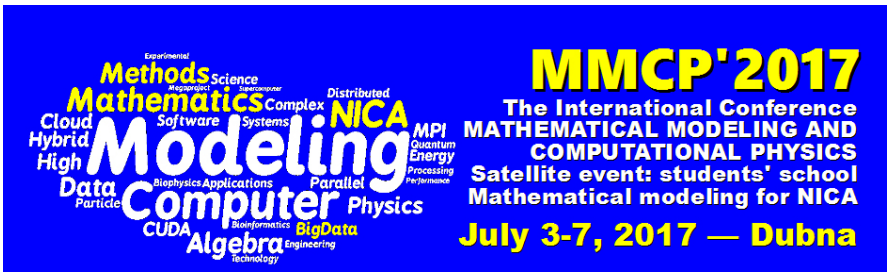

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Extrapolation of functions of many variables by means of metric analysis

Monday 3 July 2017 13:30 (15 minutes)

We consider a problem of extrapolating functions of several variables. It is assumed that the values of the function of m variables are given at a finite number of points in some domain D of the m-dimensional space. It is required to restore the value of the function at the points outside the domain D. To solve the extrapolation problem, we propose a scheme which is based on a metric analysis approach. This scheme consists of two stages. At the first stage, using the metric analysis, the function is interpolated to the points of the domain D belonging to the segment of the straight line connecting the center of the domain D to the point M in which it is necessary to restore the value of the function. At the second stage, based on the autoregression model and the metric analysis, the function values are predicted along the above straight-line segment beyond the domain D up to the point M. We present some numerical examples which demostrate the efficiency of the proposed scheme.

Keywords: function of many variables, extrapolation, metric analysis, interpolation, autoregression model.

Short biography note

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