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15. ABSTRACT (A 200-word or less factual summary of most significant information. If document includes a significant bibliography or literature survey, mention it here.) A method of bivariate interpolation and smooth surface fitting is developed for z values given at points irregularly distributed in the x - y plane. The interpolating function is a fifth-degree polynomial in x and y defined in each triangular cell which has projections of three data points in the x - y plane as its vertexes. Each polynomial is determined by the given values of z and estimated values of partial derivatives at the vertexes of the triangle. Procedures for dividing the x - y plane into a number of triangles, for estimating partial derivatives at each data point, and for determining the polynomial in each triangle are described. A simple example of the application of the proposed method is shown. User information and Fortran listings are given on a computer subprogram package that implements the proposed method.			
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