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Bernstein-Bezier Polynomials and Vertex Splines

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Oral Presentation 3.5

BERNSTEIN-BEZIER POLYNOMIALS AND VERTEX SPLINES

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This presentation will begin with a brief introduction of Barycentric coordinates. Then Bernstein-Bezier expressions of piecewise polynomials over simplexes will be presented. Several examples will be given. The smoothness and continuity of these Bernstein-Bezier expressions will also be shown. This will lead to the discussion of piecewise C^1 quadratic interpolation and C^1 quadratic vertex splines. Examples of a spline space will be examined. Finally the approximation to $f(x,y)$ in terms of $f(i, j)$, where i,j is an element of z will be explained.