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Edmond Nadler* (enadler@emich.edu), Department of Mathematics, Eastern Michigan University, Ypsilanti, MI 48197. *Approximation by Bivariate Linear Splines for Adaptive Mesh Generation.*

An early work in the analysis of adaptive mesh generation was [Nadler 1985]. The setting is the approximation of a smooth bivariate function with polygonal domain by piecewise linear functions that are linear on each triangle in a triangulation of the domain, and the asymptotics as the number of triangles goes to infinity are considered. An asymptotic error estimate was obtained for best L_2 approximation in this setting, and used to characterize such an asymptotically optimal sequence of triangulations.

In this talk, the above results are reviewed and extended to the more useful cases of *continuous* linear (approximating) splines and *interpolating* linear splines. (Received September 16, 2008)