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Jian-ao Lian* (unurbs@yahoo.com), Department of Mathematics, P. O. Box 4189, Prairie View
A&M University, Prairie View, TX 77446-4189. *Bivariate Multiwavelets*.

Non-separable bivariate scaling function vectors and their corresponding multiwavelets with any integer dilation matrix are considered. A framework for the design of scaling function vectors with certain polynomial preservation order is presented. When the quincunx dilation matrix is chosen, compactly supported bivariate spline scaling function vectors and pre-wavelets as well as orthogonal bivariate multiwavelets over regular four-directional meshes are investigated. (Received January 06, 2004)