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Ghulam Mustafa* (ghulam.mustafa@iub.edu.pk), 2.06 Keenan House, Old Dryburn Way, DH1 5BN, Durham, UK. *Class of non-stationary binary subdivision schemes*. Preliminary report.

Non-stationary subdivision schemes have proven to be efficient iterative algorithms to construct special classes of curves and surfaces. One of the important capabilities of non-stationary schemes is the reproduction or generation of trigonometric polynomials, trigonometric splines and, in particular, circles, ellipses and so on. Such schemes are useful in computer graphics and geometric modelling. In this paper, we have established the Lagrange identities that are used to construct new families of univariate, binary, non-stationary subdivision schemes with higher smoothness. Other aim of this work is to generate an approximating subdivision scheme with a tension parameter, which is capable of reproducing circles and all other conic sections exactly whenever such a parameter has been chosen correctly. It is observed that the limit curve of the proposed approximating scheme is closer to the initial control polygon and for a certain range of parameter limit curve passes through the initial polygon. Moreover, the proposed schemes are non-stationary counterpart of the some of the existing stationary schemes. The advantages of the schemes are illustrated with examples. (Received January 15, 2012)