AN EFFICIENT COMPUTATION OF WAVELETS BASED ON TRIGONOMETRIC B-SPLINES REVERSE SUBDIVISION

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Abstract. This paper presents a novel approach for deriving refinement equations applicable to uniform algebraic trigonometric B-splines (UAT B-splines) of arbitrary order k. In this work, we develop a general formula for the refinement equation tailored to UAT B-splines of any order k. Leveraging the matrix representation of this equation, we further derive the subdivision formula for UAT B-spline curves. Additionally, we provide an explicit form of the inverse subdivision scheme corresponding to quadratic UAT B-splines. The study also delves into constructing mutually orthogonal spline wavelet spaces on uniform partitions of a bounded interval, utilizing reverse subdivision schemes, and substantiates the findings with numerical experiments.