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**Convergence analysis of subdivision processes on the sphere.** (English)  
Zbl 07465512  

Summary: We analyse the convergence of nonlinear Riemannian analogues of linear subdivision processes operating on data in the sphere. We show how for curve subdivision rules we can derive bounds guaranteeing convergence if the density of input data is below that threshold. Previous results only yield thresholds that are several magnitudes smaller and are thus useless for *a priori* checking of convergence. It is the first time that such a result has been shown for a geometry with positive curvature and for subdivision rules not enjoying any special properties like being interpolatory or having non-negative mask.

**MSC:**

65-XX  
Numerical analysis

**Keywords:**
refinement algorithm; approximation theory; differential geometry

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