

Cutting convex polyhedra

Hartmut Prautzsch
Karlsruhe Institute of Technology
prautzsch@kit.edu

In Chaikin's algorithm, we iteratively smooth a polygonal line by cutting corners such that we arrive at a quadratic spline in the limit. For this and other edge preserving corner cutting schemes, we have de Boor's most general result that the limiting curve is differentiable if and only if the maximum angle flattens out eventually. In this talk, I will discuss face preserving cutting for convex polyhedra, explain why de Boor's result can not easily be generalized, go through counter examples and present results. Further, I introduce our 4-8 and 4-6-8 schemes, show outcomes of ongoing experiments, and may also briefly mention our honeycomb and $\sqrt{3}$ cutting schemes.

Joint work with: Yijun Xu.