

# Second Order Surface Analysis Using Hybrid Symbolic and Numeric Operators\*

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## Abstract

Results from analyzing the curvature of a surface can be used to improve the implementation, efficiency, and effectiveness of manufacturing and visualization of sculptured surfaces.

In this paper, we develop a robust method using hybrid symbolic and numeric operators to create trimmed surfaces each of which is solely convex, concave, or saddle and partitions the original surface. The same method is also used to identify regions whose curvature lies within prespecified bounds.