

Metamorphosis of Polyhedral Surfaces using Decomposition

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ABSTRACT

This paper describes an algorithm for morphing polyhedral surfaces based on their decomposition into patches. The given surfaces need neither be two-manifolds nor do they have to apply to any other topological constraints. We present a new algorithm for decomposing surfaces into patches. We also present a new projection scheme that handles topologically cylinder-like polyhedral surfaces. We show how these two new techniques can be used within a general framework and result with morph sequences that maintain the distinctive features of the input models.

Keywords: Metamorphosis, shape transformation, surface decomposition