

# Is Subdivision the Ultimate Representation Scheme for Visualization and Animation?

Fuhua (Frank) Cheng  
Department of Computer Science  
University of Kentucky

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The talk serves a very simple purpose:

to present to you a subdivision based representation scheme, its properties, and comparison with other representation schemes, so, at the end of the talk, you can determine (for yourself) if this is the ultimate representation scheme for all graphics applications, including visulation and animation

why single out visualization and animation? visualization is an ultimate goal of all graphics activities and animation requires the msot efficient representation scheme to achieve good results. A representation scheme that suits all visualization and animation applications certainly is a good representation scheme.

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Obviously, one would ask:  
what kind of representation scheme is this? This scheme uses subdivision surfaces to model, to represent geometric objects. You might not have heard of subdivision surfaces before. But they are not new. They have frequently been used in movie production, such as Pixar's *Geris Game*, commercial modelers, and core technology in game engines.

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The question then of course is:

what is so special about this representation scheme. Quite a few reasons. I will give you three the most important ones.

First, this scheme can represent any geometric shape with only one subdivision surface. We call this property "one-piece representation". The magic word here is "any". it doesn't matter how complicated the shape of topology, as long as it is a geometric shape, we can always represent it with one subdivision surface. This is a unique property. B-spline or NURBS surfaces can not do this, not even close.

(Then show a fly-in. This is page 5)