

Review of Manuscript for Engineering with Computers (EWC05-036)

I have completed the review of WEC05-036.

Innovativeness: Good

Style and Clarity: Excellent

Suitability for Journal: Excellent

Overall Rating: Excellent

Paper should be accepted if revised as per review

Specific comments for authors:

Section 2, first sentence: I recommend avoiding the use of the word "framework" here, since you describe frameworks in the previous section and say that you aren't using them.

Section 2.2, sentence beginning with "variants of this...". The word "this" seems to refer to simple meshes described instead of other (non-simple) meshes. I suggest rephrasing.

Section 3: CCTSS is actually the Center for Component Technology for Simulation Software (technologies -> technology, science -> software)

Section 3.1: Why do mesh entities always have the same handle? Is it so that they can be compared directly? It seems that some dynamically generated data structures might have different handles even if they describe the same underlying entity, but that would require the addition of a comparison operator and a memory management policy. A sentence or two of justification will help clear this up.

Section 3.1: "... can be populated by string name using the load functionality" is confusing. What exactly does this mean - load from a file, restore from a serialized string, or what? Is the load functionality described in this document?

Section 3.2: Smooth particle hydrodynamic (SPH) "meshes" are described, but presumably this technique would be applicable to a wide range of particle-based methods, including mesh-free methods, molecular dynamics, and others. I suggest not singling out only SPH.

Section 3.2: "modificiation" -> "modification"

Section 3.2: "it serves as the interface to the Mesquite mesh quality improvement and Frontier front tracking" is confusing. Should it be "it serves as the interface to the Mesquite mesh quality improvement and Frontier front tracking tools."?

Section 3.3: The bullet regarding model loading. It isn't clear how this relates to the TSTT interface. Are there specific interfaces for model loading? Does the interface do this?

Section 3.3 seem to be not as well polished as the rest of the paper. In particular, page 18 is almost entirely a set of bulleted items that makes it appear more like an outline than a paper.

Section 3.4, first paragraph: Two example use cases for the field interface are discussed. Other obvious use cases include visualization and analysis/postprocessing. Were these considered?

Section 3.4: "transform a fields from one..." -> "transform a field from one..."

Section 4.2, first paragraph: the italics do not seem consistent. Why is geometric quality metrics italicized? If *a priori* is italicized because it is latin, then *a posteriori* should also.

In summary, this is a very well-written paper on an important subject. Although I have suggested several improvements, none of them are super-critical. I am glad to see it being published.