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77845. *Orientable Mesh Modeling*.

In this work, I describe a solid foundation for orientable 2-manifold mesh modeling using graph rotation systems. Based on this theory, we have developed TopMod , which is is an orientable 2-manifold mesh modeling system. TopMod provides a wide vriety of High Genus Modeling tools, Remeshings & Subdivisions, and Extrusions & Replacements. Using TopMod, one can find a wide variety of ways to create high genus shapes; almost all subdivision algorithms, wide variety of ways to remeshing shapes and new extrusions. These tools are also useful for Architectural applications, Design and Sculpting and Sketch Based Modeling. (Received July 08, 2016)