Abstract

This paper presents a multi-resolution cloth simulation based on first order finite element method. Previous works on multi-resolution cloth simulation used discrete cloth models like mass-spring in combination with one of subdivision schemes. The major drawback of such models is the difficulty of adjusting their parameters, which slow down the convergence of the model, especially when using different levels of details. Models based on first order finite element method can handle arbitrary triangle meshes, not necessarily regular ones. In order to contribute to solve the problem of the divergence of simulations, a method for correcting the positions of particles is proposed. And to improve the simulation, criteria such as the angle of subdivision, the shape of the fabric and the number of the level of detail are taken into account.

References

22. Jan Bendera, Daniel Weberb, Raphael Dizio, “Fast and stable cloth simulation based on

Index Terms

Computer Science

Information Sciences

Keywords

Cloth Simulation, Particle Systems, Finite Elements, Multi-resolution, Level of Details (LODs), Position correction.