Real time cloth simulation using particle system and bounding volume hierarchy

ABSTRACT

Real-time clothing simulation is constantly being researched in and built to represent a virtual cloth that is similar as it would in life. Current issue in clothing simulation would be in the way to represent the cloth properties in the virtual environment in real time situation. The problem issue also increases when the cloth is required to perform inter-collision with other object that is static or even moving. This paper proposed particle system model and using self-created Axis-Aligned Bounding Box (AABB) group under Bounding Volume Hierarchy (BVH) to help in collision computation and also reducing the time needed to compute collision resolution. The result of experiment shows real time behavior of cloth able to produce a realistic motion with acceptable frame per second. The result shows that the technique is capable of running in real-time having an average frame per second that is higher than the border line of 25 fps. The current technique still can be improved especially to find the best collision detection time on cloth node checking time properly. © 2020 SSRG International Journal of Engineering Trends and Technology. All rights reserved.