

Present document describes algorithms used in program Virtual playground. This program was designed to simulate movement and interaction of perfectly rigid bodies in real environment with gravity. It had to be optimised to be able to simulate tens of bodies on contemporary PCs in real-time. It was in fact also to the prejudice of physical precision but I think that the result is physically plausible. There is also vehicle simulation added to the program. I will try to introduce difficulties I had during programming and I will do a comparison with other algorithms that are used to solve similar kind of problems. In the end, I will describe program structure and provide user guide for the program.