CROQUET
Physics

How to Use

You can move around the scene using the joystick at the bottom of the screen. The bottom-left button will return you home to where you started. The bottom-right button puts you in presentation mode where all other users will come to you and follow you when you move. You can jump to other worlds by simply clicking on their cards.

Click or scroll down to continue…
Technical Overview

Physics demonstrates how we use Rapier to provide an interactive, perfectly synchronized physics simulation in Croquet. Rapier is an extremely fast and powerful physics engine written in Rust and running in WebAssembly.

Behaviors

Physics uses several different Croquet behaviors to create this world.

Rapier

The Rapier behavior is a system level behavior, so it is included by default. Several cards add this behavior to provide the physics simulation capabilities.

cascade.js

The cascade behavior defines the physical interactions with the Rapier framework. It defines the Cascade behavior which is the collision framework and the Spray behavior that generates new card object that will interact with each other and the world. It accesses the card's properties to set up the various shapes, forces and torques for the initial conditions.

earth.js

This generates a 3D globe. This is an example where the target card utilizes a number of behaviors that work together. In addition to the Rapier behavior the card includes the Cascade and Spin behaviors.

gridBlock.js

The GridBlock behaviors simply define grid textured blocks that also act as barriers for the physics simulation.

pool.js

This generates the pool or water and continuous updates make transform the surface. This is a repurposed Three.js example.

menus.js

The menus behavior simply installs additional menus that can be used to add and remove bots and toggle the sound on and off. In this case, it installs the link to the Github repository.

lights.js

The lights behavior is used to generate the cascaded shadow map and load and construct the background sky.

pdfview.js

The PDF viewer, which is likely where you are viewing this document, is used to add documents into a world. This is a scrollable document – click, drag or use your mouse wheel.

Github

The source for the Physics world behaviors is available via the menu and on Github here:

https://github.com/croquet/physics

Credits

THREE.js   Mr Doob on Github

Rapier   Sebastien Cruzet https://rapier.rs/

Above the Clouds texture from HDRMaps.com