OpenSim 1.1
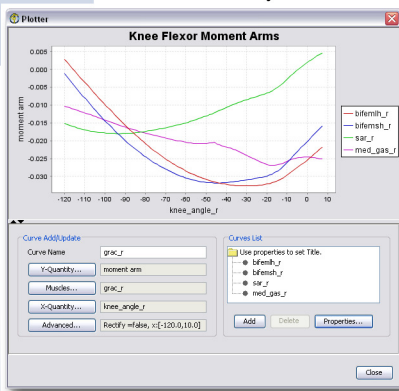
OpenSim is a freely available software system that allows you to build, exchange, and analyze **musculoskeletal models** and **dynamic simulations** of movement.
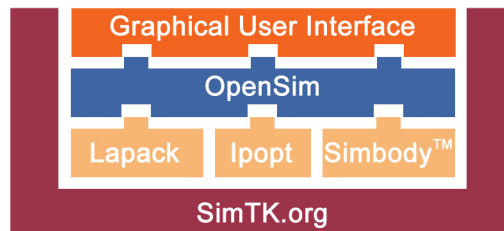

Plot Results of Analyses

What is OpenSim?

OpenSim is an interactive graphical software system for developing and analyzing simulations of the musculoskeletal system. The software is created from SimTK, a simulation toolkit developed to create mathematical models of biological dynamics. OpenSim can be used for biomechanics research, treatment planning, surgical simulation, computer animation, and ergonomics.

OpenSim Relation to SimTK

OpenSim Graphical User Interface
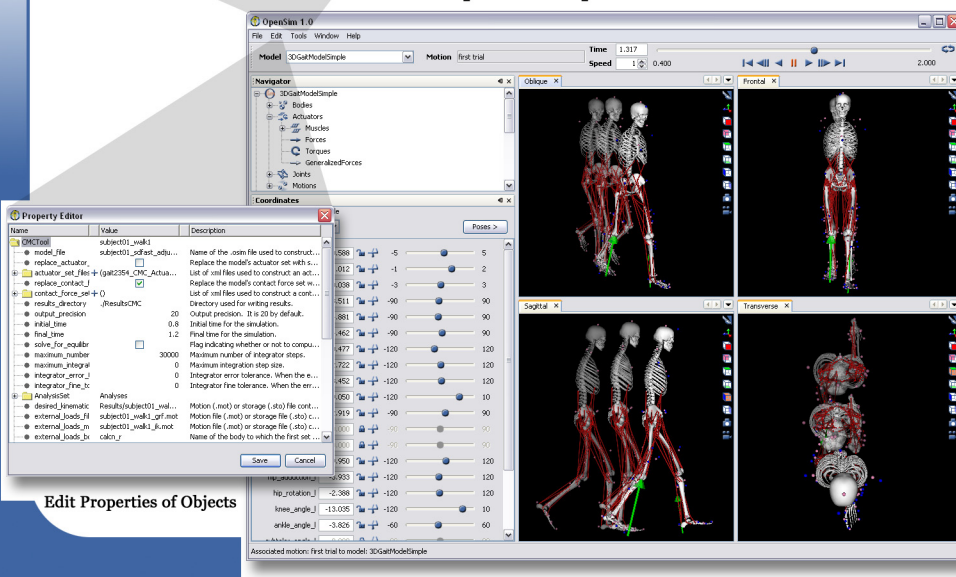

Edit Properties of Objects

Relation to SimTK

SimTK (Simulation Toolkit) is being developed by Simbios, a NIH National Center for Biomedical Computation based at Stanford University. The purpose of SimTK is to enable groundbreaking biomedical research by providing open access to high-quality tools for modeling and simulating biological structures. The tools are available at SimTK.org. The source code for SimTK is freely available and distributable under the MIT License.

OpenSim is built from computational tools available on SimTK.org, including Lapack linear algebra library, Ipopt optimizer, and the Simbody™ multibody dynamics engine. The OpenSim application and documentation are available on SimTK.org.

Compatibility with SIMM

SIMM (Software for Interactive Musculoskeletal Modeling) from Motion Analysis Corp. is a widely used software application for biomechanical analysis, surgical planning, and ergonomics. The joint (*.jnt) and muscle (*.msl) files used by SIMM to describe models of the musculoskeletal system can be converted into OpenSim models (*.osim) and brought into the OpenSim framework.

OpenSim augments the functionality of SIMM and the SIMM Dynamics Pipeline by providing advanced simulation and control capabilities. In addition, the object-oriented, modular design of OpenSim allows users to extend its functionality and share functionality with other OpenSim users.

OpenSim is a self-contained modeling and simulation environment that does not require additional software components or licenses (such as SD/FAST) to generate dynamic simulations.

Visualization Toolkit

Simbody™

Simmath™

Ipopt

Computed Muscle Control

Simmatrix™

Lapack

OpenSim 1.1 Installation Instructions

1
Address https://simtk.org/home/opensim

1. Go to the OpenSim website

2
Overview
Statistics
Geography of use
Team
Downloads
Documents
Wiki (Beta)
Advanced

2. Click the Downloads link on the left side of the webpage

3
Download Link:
OpenSim-1.1.0-win32_110.exe
OpenSim 1.1 release
50580046 bytes

3. Click the OpenSim 1.1 release download link
(*SimTK login and expected use required*)

4
Run   Save   Cancel
Save in: Desktop
Save

4. Click to Save the file to a convenient location
(*such as your Desktop*)

5
OpenSim-1.1.0-win32_110.exe

5. Click to run the downloaded file

6
Run   Cancel

6. Click to Run this software from Unknown Publisher
(*if necessary*)

7
Next >
I Agree
○ Do not add OpenSim to the system PATH
● Add OpenSim to the system PATH for all users
○ Add OpenSim to the system PATH for current user
Next >
Next >
Install
Finish

7. Click Next to start the Setup Wizard,
   Click I Agree to the License Agreement,
   Choose to Add OpenSim to the system PATH for all users,
   Click Next to confirm Install Options,
   Click Next to confirm Install Location,
   Click Install to begin the installation, and
   Click Finish to end the Setup Wizard

8
All Programs ▶   OpenSim 1.1 ▶   OpenSim
start   Uninstall

8. Click Start > All Programs > OpenSim 1.1 > OpenSim to launch application

https://simtk.org/home/opensim