

Comparison of Rigid Body Dynamics in Houdini and Maya

MADE 0910 Personal Inquiry

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Personal Inquiry Notes - Annotated List of References

- Autodesk, *Autodesk Maya*. (2009) [computer program]. San Rafael, USA.: Autodesk

Maya was one of the two 3D animation programs that I used to compare Rigid Body Dynamics (RBD) in animation programs. I studied the different RBD features and functionality available in Maya and also the way RBD is set-up and used in Maya animation projects. Maya provides a menu based approach to implementing RBD that is certainly quite easy to use. Furthermore, I used Maya to create some video clips that I produced to illustrate rigid body dynamics in Maya.

- Autodesk, 2008. *Autodesk Maya 2009 Online Help*. San Rafael, USA.: Autodesk. Available from: <http://download.autodesk.com/us/maya/2009help/index.html> [Accessed 12. May 2010]

The Maya Online help has been a very useful resource since it contains both a classical user guide that explains the different tasks that one can do with Maya and also a technical reference documentation that can be used to quickly lookup attribute and parameter sets for Maya objects.

- Digital-Tutors. 2008. *Fundamentals of Rigid Body Dynamics in Houdini* [DVD]. Oklahoma City: Digital-Tutors.

This video based tutorial was an excellent starting point for learning the concepts of Rigid Body Dynamics in Houdini. The tutorial is split in about 30 short lessons and it goes already quite in depth and allowed me to have a closer look at a wide range of Houdini's way of handling RBD networks.

- Digital-Tutors. 2008. *Fundamentals of Maya Dynamics: Soft & Rigid Bodies* [DVD]. Oklahoma City: Digital-Tutors.

This video based tutorial covers both soft and rigid bodies in Maya. It was very good to learn many different aspects of RBD in Maya and to get some hands-on training for how to set up RBD scenes in Maya.

- Side Effects Software, 2010. *Houdini 10 online Help*. Toronto, Canada.: Side Effects Software. Available from: <http://www.sidefx.com/docs/houdini10.0/> [Accessed 12. May 2010]

The online help of Houdini provides a very good reference guide to look up detailed information about the properties of the different nodes and networks used for rigid body dynamics. At the same time the online help is very technical and provides very little explanations.

- Side Effects Software, *Houdini*. (10.0) [computer program]. Toronto, Canada.: Side Effects Software

Houdini 10 was one of the two 3D animation programs that I used to compare rigid body dynamics in animation programs. I studied how to set up networks for rigid body dynamics. I created several small video clips to illustrate rigid body dynamics in Houdini.

- Wikipedia. 2010. *Rigid Body Dynamics* (Version from 27. March 2010). Wikipedia, The Free Encyclopedia. Available from: http://en.wikipedia.org/wiki/Rigid_body_dynamics [Accessed 2010-04-20].

This Wikipedia article gives a nice short summary about rigid body dynamics and then goes right into some mathematical principles of RBD.

- Wikipedia. 2010. *Physics Engine* (Version from 28 April 2010). Wikipedia, The Free Encyclopedia. Available from: http://en.wikipedia.org/wiki/Physics_engine [Accessed 2010-05-10].

This Wikipedia article describes in a good and easily understandable way the purpose and different applications of physics engines for such as computer animation, scientific simulations.