

[特別講演]

The Art of Fluid Animation.

Jos Stam[†]

Abstract:

In this talk I present my work on fluid dynamics for the entertainment industry. The talk will introduce basic concepts of fluids and a brief history of computational fluid dynamics. Subsequently I will talk about my contributions of applying computational fluid dynamics to the entertainment industry like games and movies. I will also discuss our implementation of this technology into our MAYA animation software. In 2008 I received a Technical Achievement Award from the Academy of Motion Picture Arts and Sciences ("tech Oscar") for this work. I will also mention my work on bringing fluid dynamics to mobile devices like the Pocket PC in 2001 and the iPhone in 2008. In 2010 we released FluidFX and MotionFX for iOS and MacOS. The talk will feature many live demonstrations and animations. The talk is basically a condensed version of my book "The Art of Fluid Animation".

About the Speaker:

Jos Stam was born in the Netherlands and educated in Geneva, Switzerland, where he received dual Bachelor degrees in computer science and pure mathematics. In 1989, Stam moved to Toronto where he completed his Masters and Ph.D. degrees in computer science. After that he pursued postdoctoral studies as a ERCIM fellow at INRIA in France and at VTT in Finland. In 1997 Stam joined the Alias Seattle office as a researcher and stayed there until 2003 to relocate to Alias' main office in Toronto. Stam is now employed with Autodesk as a Senior Research Scientist as part of Autodesk's acquisition of Alias in 2006.

Stam's research spans several areas of computer graphics: natural phenomena, physics-based simulation, rendering and surface modeling, especially subdivision surfaces. His latest creation is a unified dynamics solver called Nucleus, which is embedded in MAYA and has been used in many movies to create special effects. He has published papers in all of these areas in journals and at conferences, most notably at the annual SIGGRAPH conference. In 2005 Stam was awarded one of the most prestigious awards in computer graphics: the SIGGRAPH Computer Graphics Achievement Award. Stam also won two Technical Achievement Awards from the Academy of Motion Picture Arts and Sciences: in 2005 for his work on subdivision surfaces and in 2007 for his work on fluid dynamics.

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