



Algodoo – interaktivni izobraževalni program

Algodoo – An Interactive Educational Software

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Povzetek

Nove tehnologije, kot so na primer nizkocenovne interaktivne table, omogočajo široko uporabo interaktivnih programov.

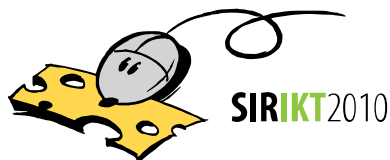
Interaktivni izobraževalni programi pri uporabi omogočajo precejšnjo avtonomijo in ustvarjalnost, vendar kljub temu večinoma potekajo po vnaprej določenih, programiranih scenarijih.

Namen predstavitve je prikaz osnovnih značilnosti delovanja programa Algodoo – novega interaktivnega programa, ki temelji na najnovejših tehnologijah za interaktivno večfizikalno simulacijo s številnimi dodatki za mehaniko in visoko učinkovitimi numeričnimi metodami. Na zabaven in poučen način vzpodbuja uporabnikovo ustvarjalnost in motivacijo za pridobivanje novih znanj.

Kaj vse omogoča program Algodoo?

- Uporabo preprostih risalnih orodij za ustvarjanje, urejanje, nalaganje in kopiranje različnih scen v dvodimenzionalnem prostoru.
- Prikazovanje vseh vrst vektorskih simulacij s preprostimi premiki, ki potekajo po fizikalnih zakonih.
- Spreminjanje fizikalnih količin in s tem tudi potek scen.
- Prikazovanje lastnosti trdnih teles, tekočin, gonil, gravitacije, zvez, trenja, pršenja, laserskih žarkov, optičnih pojavov in delovanja motorjev.
- Povezovanje uporabnikov v skupnost, ki nudi veliko količino že narejenih scen in zanimivih posnetkov s portala YouTube. Glavni uporabniki so predvsem učitelji, animatorji in znanstveni centri.
- Portal Algodoo, ki učiteljem omogoča izmenjavo idej, lekcij, delovnih listov, vaj in scen. Prav tako pa omogoča izmenjavo izkušenj učencem, dijakom in študentom.

Abstract



New technologies, like low-cost interactive whiteboards, offer a wide use of interactive software. Interactive educational software enables a wide range of user autonomy and creativity, however at the same time they mostly still run on preset, programmed scenarios. The purpose of my presentation is to present the basic characteristics of the new interactive software Algodoo which is based on highly competitive technologies for interactive multiphysics simulation, including numerous add-ons for mechanics and high performance numerical methods. It is designed to encourage user's own creativity, ability and motivation to obtain new knowledge. The synergy of science and art makes Algodoo as much educational as it is entertaining.

What does Algodoo offer?

- Creating and editing scenes using simple drawing tools, saving and loading scenes, starting and stopping simulation, interacting with simulation by click, drag, tilt and shake. Adding color traces, force and velocity vectors for enhanced visualization.
- Presentating a physics of rigid bodies, fluids, chains, gears, gravity, contacts, friction, restitution, springs, hinges, lock, motors, laser rays, optics.
- User community Algodoo that has a large community with over 10.000 user provided scenes and thousands of entertaining YouTube clips. Among the users are youth, animators, teachers and science centers.
- The algodoo portal that enables educators to exchange ideas, lectures and scenes, as well as collaborative work between pupils.