

Physics (teaching) and the I-Pad



UNIVERSITÀ DEGLI STUDI DI TRENTO

The need of renewal



WHY?



methodological issues

- ❑ motivation of students
- ❑ extension of their abilities and knowledge
- ❑ usage of modern technologies
- ❑ teaching/learning through great themes
- ❑ transversal/integrated disciplines

methodological issues

- i-pad, tablets, computers, palm-phones
NOT as substitutes of more traditional approaches
- Standard laboratory experiments
enriched with new technologies

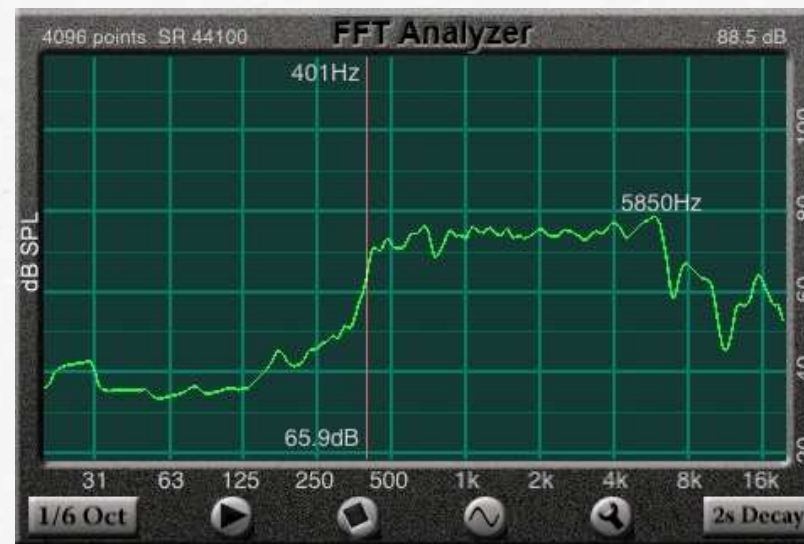
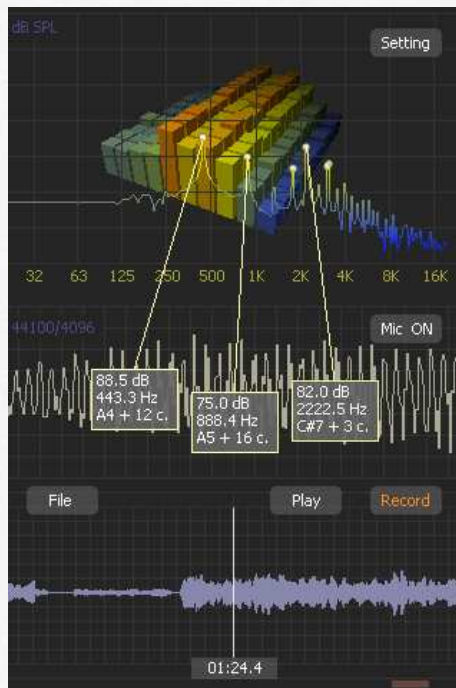
main areas of operativity

- ❑ continuous, on-the-field search, explore, browse, find out “science stuff”
- ❑ visualization of simulated experiments
- ❑ visualization of actual experiments
- ❑ integrated math/science environment
- ❑ multimediality as an actual laboratory
- ❑ physical video-games
- ❑ sharing, communicating, exchanging results

some examples

- ❑ science of sound
- ❑ kinematics and space localization
- ❑ fluid dynamics
- ❑ electronics
- ❑ waves and oscillations
- ❑ quantum physics
- ❑ astronomy
- ❑ flight simulation
- ❑ real lab interfacing

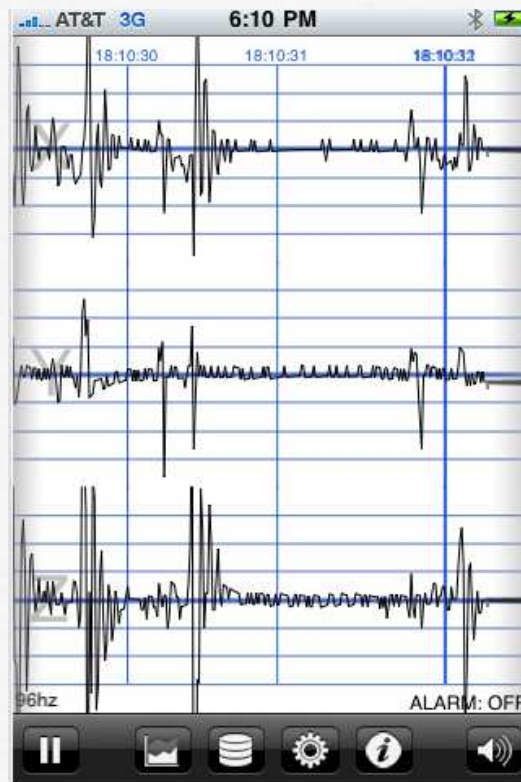
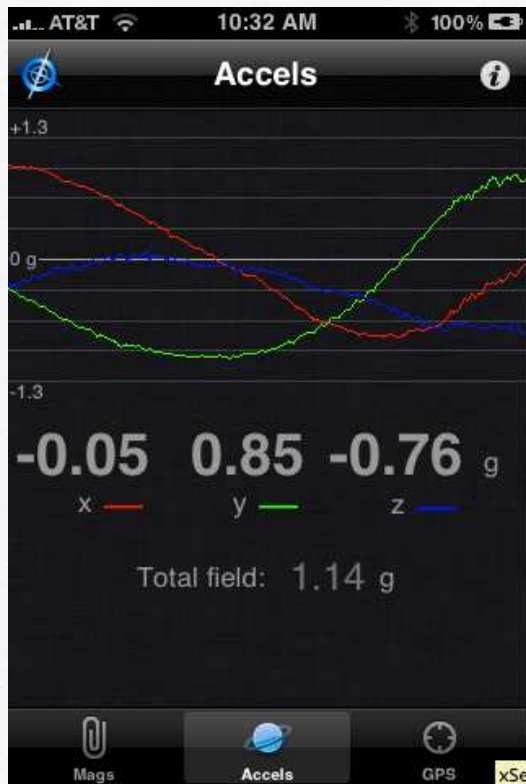
science of sound



AudioTools <http://www.studiosixdigital.com/>

IAnalyzer <http://phyar.cn/>

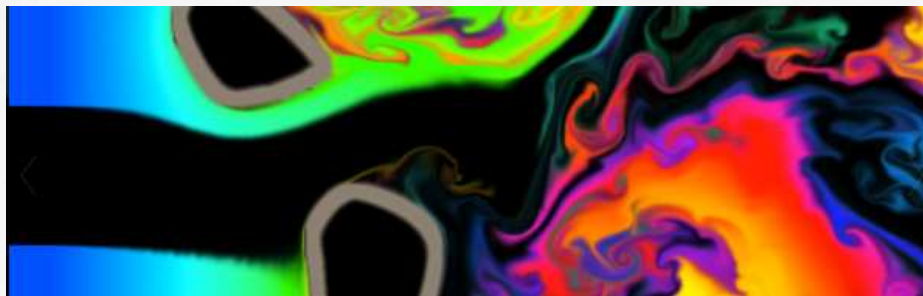
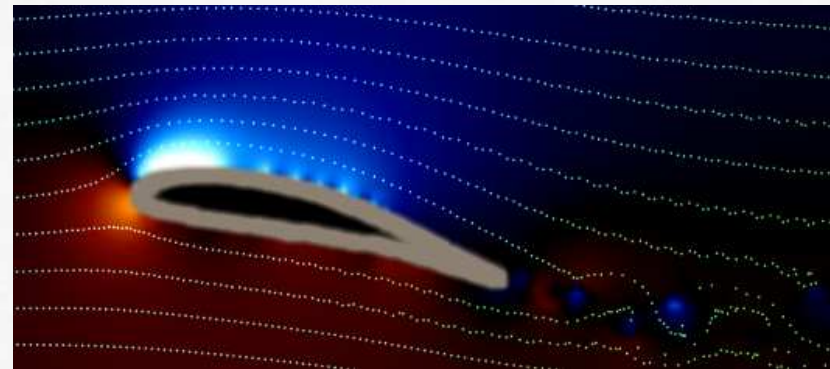
kinematics, space localization



XSensor <http://www.xbow.com/>

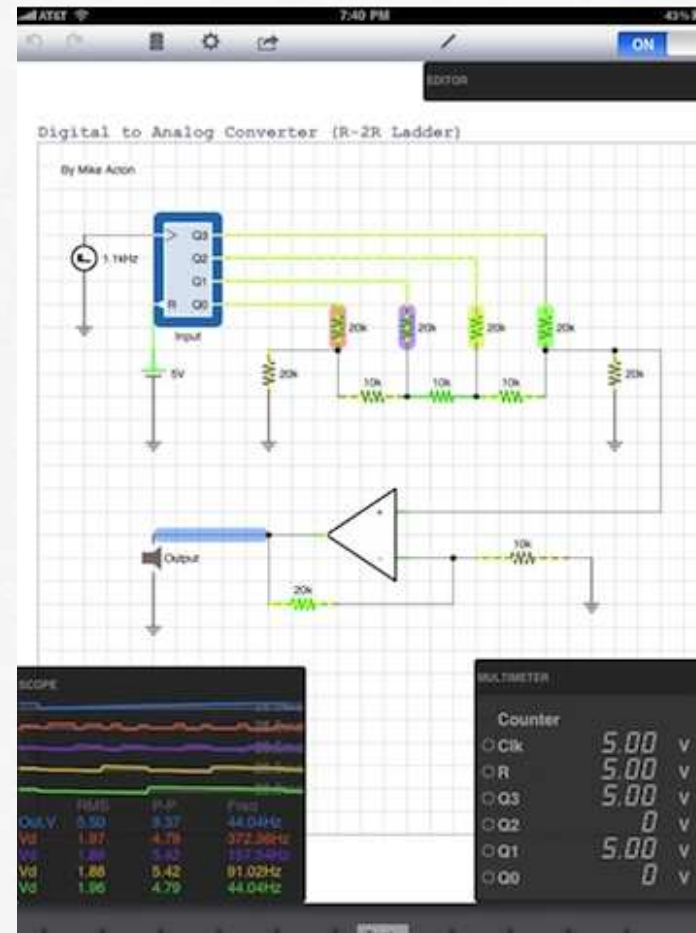
Iseismometer <http://iphone.objectgraph.com/iseismometer/>

fluid dynamics



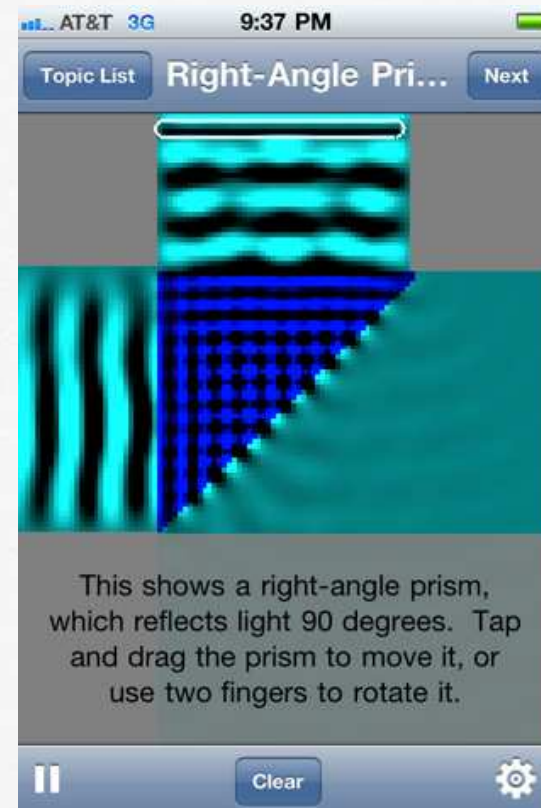
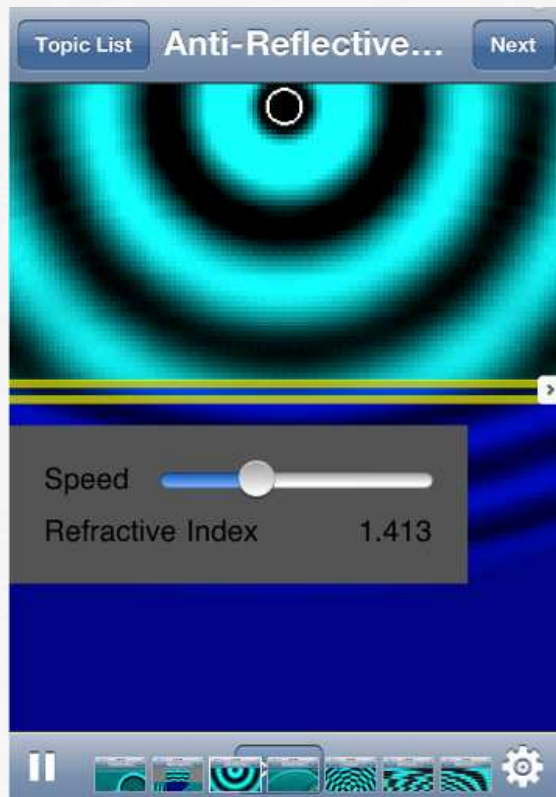
Wind Tunnel <http://algorizk.com/windtunnel/>

electronics

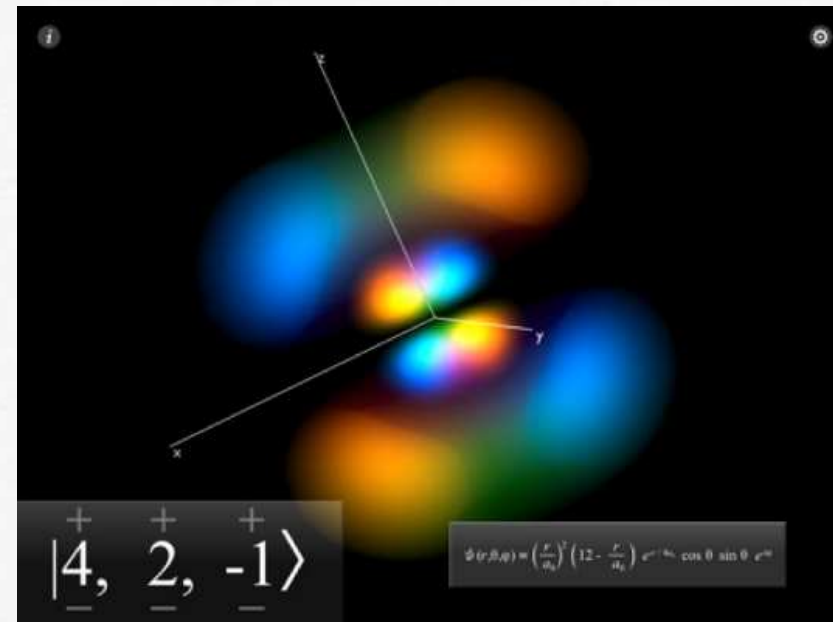
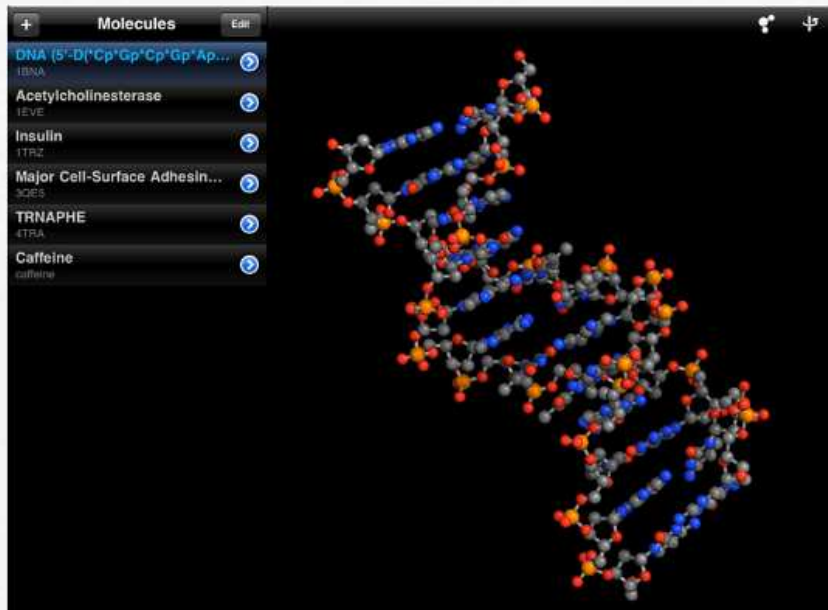


ICircuit <http://icircuitapp.com/>

waves and oscillations



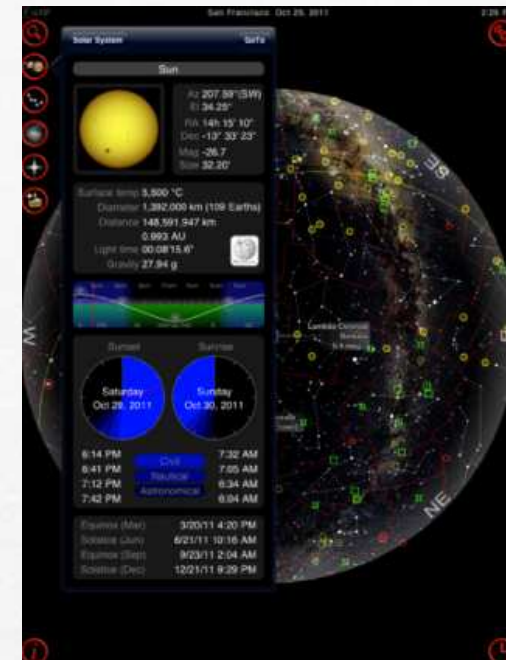
quantum physics



Molecules <http://www.sunsetlakesoftware.com/molecules>

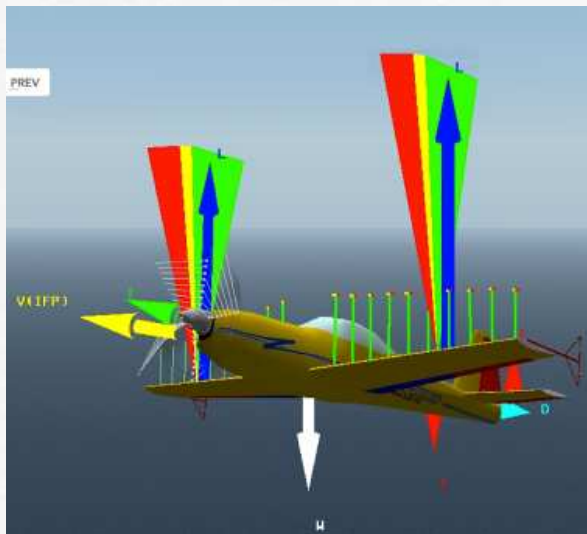
Atom in a box <http://daugerresearch.com/orbitals/index.shtml/>

astronomy



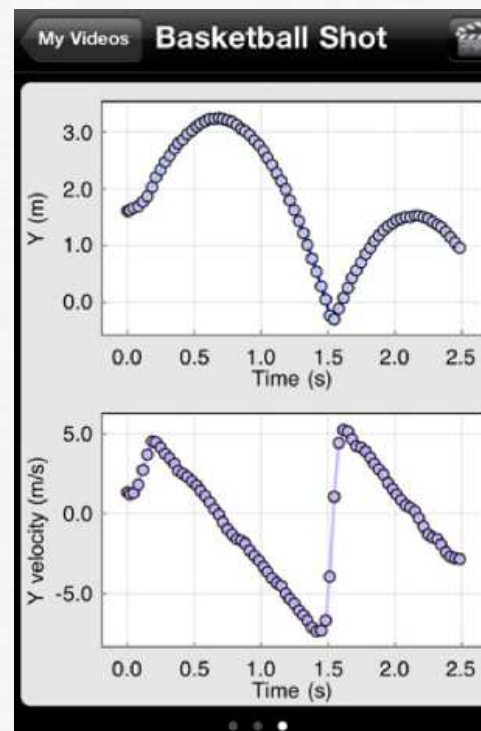
Nasa HD <http://www.nasa.gov/centers/ames/iphone/index.html>
Exoplanet <http://exoplanet.hanno-rein.de/iphone/>
Redshift http://www.usmiphone.de/redshift_en.html

flight simulation

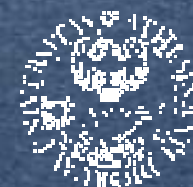


X-plane <http://www.x-plane.com>

real lab interfacing



Vernier Video Physics <http://www.vernier.com/products/software/video-physics/>
Pasco SparkVue <http://www.pasco.com/family/sparkvue-for-ios/index.cfm>



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