

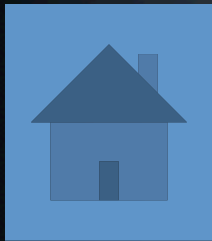
EKT

Education and Knowledge Transfer Objectives, Progress & Plans

Irina Overeem

October 2009

Modeler Education



SedFlux Model Home with downloads, installation and input explanations, and issues discussion

NEEDS TO BE SOLICITED FROM CSDMS MEMBERS

EKT Topics

- Education of CSDMS modelers
- Educational Repository
- Focus on undergraduates
- EKT short-term and long-term goals

Educational Repository

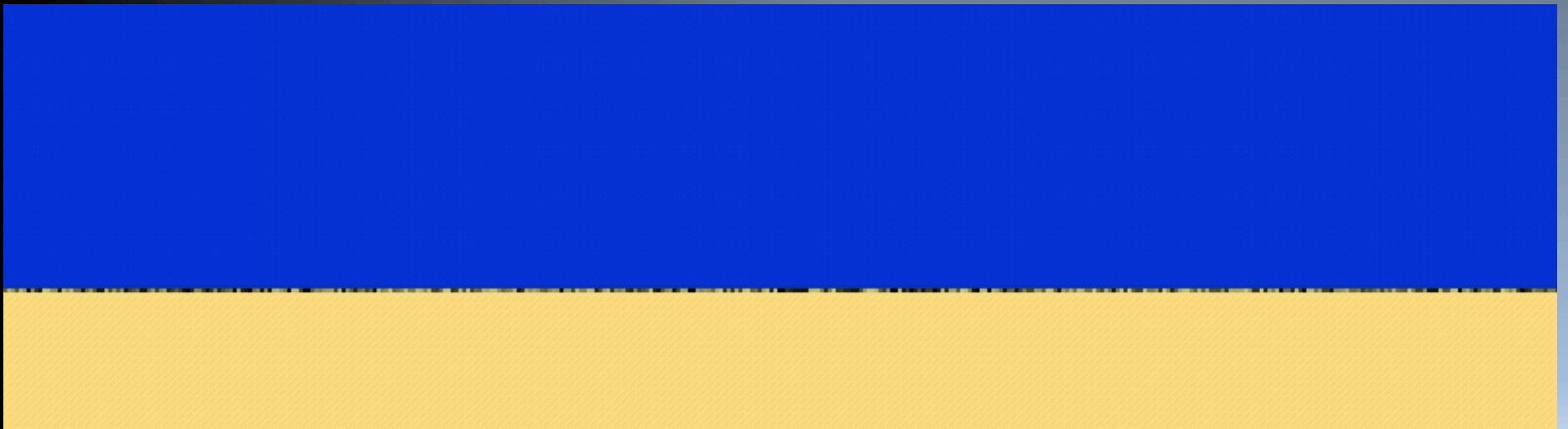
Objective: distribute model simulations, educational presentations, reports, publications, short course material and the CSDMS hosted workshops

This repository has been started, but major expansion between 2009-2011.

Teaching Materials now contain lectures of 2 modeling courses and model exercises. Intended for download for teaching faculty, movies and animations of model results.

Educational Animations

- Well-documented model movies to explain surface-dynamics processes. Every movie has a short description, and more detailed explanation, key words.
- Fit into the data-base like structure in wiki.



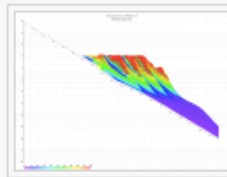
Ashton and Murray Model, Coastal Evolution of Wave-dominated coast

Educational Animations

CSDMS Coastal Animations

[\[edit\]](#)

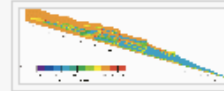
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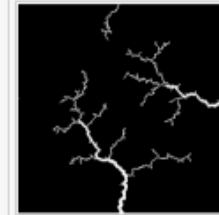
Info: [Barrier Island](#)
Credit: Joep Storms
[DOWNLOAD & PLAY](#)



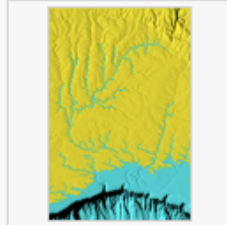
Info: [Spit Evolution](#)
Credit: Andrew Ashton
[DOWNLOAD & PLAY](#)



Info: [Low Gradient Delta Evolution](#)
Credit: Irina Overeem
[DOWNLOAD & PLAY](#)



Info: [Tidal Network Evolution](#)
Credit: D'Alpaos
[DOWNLOAD & PLAY](#)





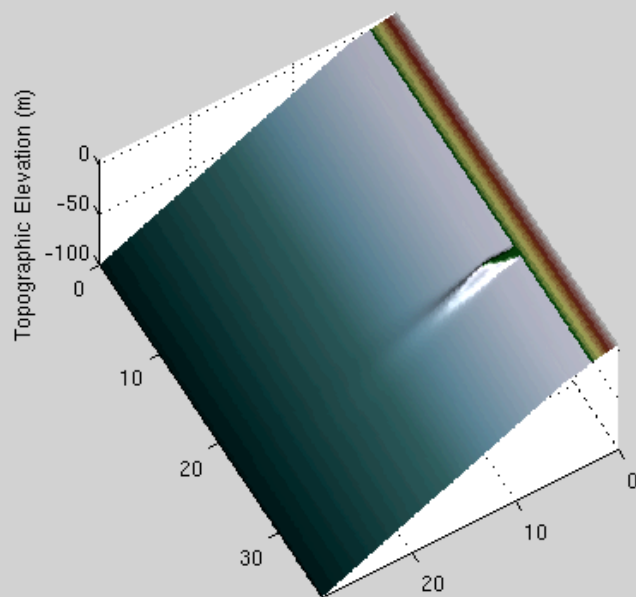
Info: [Shelf Incision](#)
Credit: Sergio Fagherazzi
[DOWNLOAD & PLAY](#)

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Educational Animations

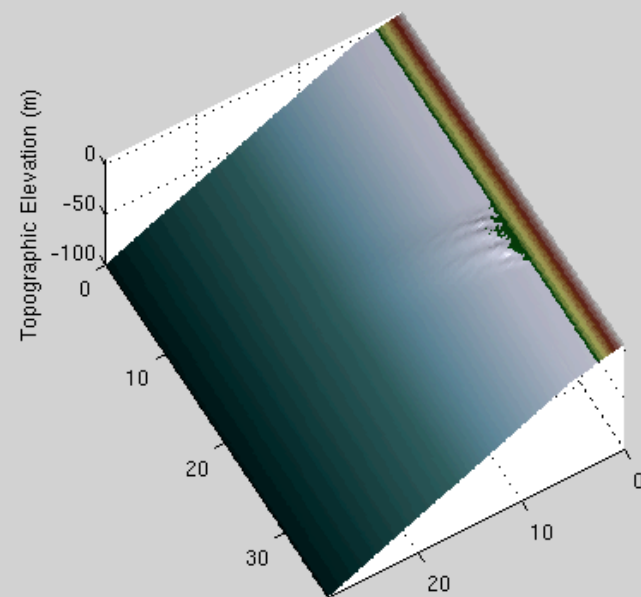
Basic model experiments, stepping up in complexity.
Fit into the data-base like structure in wiki.

Note new toolbar buttons: [data brushing](#) & [linked plots](#)   [Play video](#)



Basic Plume

Note new toolbar buttons: [data brushing](#) & [linked plots](#)   [Play video](#)



High Switch Frequency

Associated Algorithms is key for learning processes as well as model sensitivity

Educational ESP Movies

- **Well-documented real-world to explain surface-dynamics processes. Every movie has a factsheet, and more detailed explanation, key words.**

Arctic Coastal Erosion

- Summer of 2008, time-lapse coast observation

- Warming permafrost and longer sea-ice free Arctic Ocean promote rapid coastal retreat

-- Discussion and Recommended Reading

-- Authors: Cameron Wobus (CIRES), Irina Overeem, Bob Anderson, Nora Matell (INSTAAR), Gary Clow, Frank Urban, Ben Jones (USGS)



Short-term Goals

- Really good examples of model labs to showcase educational modules, every WG 1 example:

GC2D-HYDROTREND-CEM-PLUME

- 1) Models can be run stand-alone through Ccaffeine GUI
- 2) Users can set few key parameters, run & download output
- 3) Help on models is available through links to wiki

BIG IDEAS ON EKT

- Series of model labs with added process complexity
- Develop EKT modeling framework so that it can keep improving and growing. Tool for module use and student assessment for individual teachers.
- ‘GOOGLE Earth’ like application that set your model input-conditions automatically streamed.
- Publish in educational journals
- Surface Processes Animations for Science Museum and NP's