

GROUP I: INTERACTIONS WITH FIELD AND LAB EFFORTS

There are many coordinated programs going on with strong field and lab components focused on erosion, sediment transport, deposition, morphodynamics and stratigraphy:

Field Examples:

- NSF Margins Source-to-Sink -- field studies of whole sediment systems
- ONR Mine Burial -- sandy, wave-dominated inner shelf over storm events
- ONR/EU EuroSTRATAFORM -- field studies of whole sediment systems
- ONR GEOCLUTTER -- channel-fill shelf stratigraphy formed over sea level cycles
- Consortium of Universities for the Advancement of Hydrological Sciences Inc -- hydrological field observations
- Recent ONR funded nearshore experiments (e.g., Duck'94, SandyDuck, etc.)
- USGS funded US Seabed and GO Seabed historical seabed data sets
- NSF-funded Marine Geology historical database development
- US and Canadian site-specific sea floor observatories for shallow water marine sediment dynamics
- Underutilized and/or inaccessible industry seismic and stratigraphic data





Lab Examples:

- NSF National Center for Earth surface Dynamics -- proposed center to facilitate physical laboratory experiments on erosion/transport/depositional systems.
- ONR funded U-Tube facility at Univ. Illinois for wave boundary layer transport
- Past compilations of laboratory flume data.
- European labs, e.g., Hanover (Waves), Delft (Nearshore and estuarine), Utrecht (Depositional environments)

(Note recent growing interest in lab experiments, despite long-term reduction in US funding support)



Conclusions:

- Common packages of existing data would be an immensely valuable resource
- There are a multitude of large historical and ongoing field and lab programs, observatories and historical data bases to provide potential model resources.
- Each model component would potentially benefit from one or more CSM-stored databases.
- The modeling community must invest limited resources toward cataloguing, linking to and/or mining the most useful existing lab and field data sets.
- These data sets will be essential for model bench-marking, quality control and advancement of community sediment models.
- Laboratory data sets, artificially modified landscapes and strongly forced field environments are especially conducive to forming bench-mark data sets.
- CSM should highlight processes which are poorly understood from a modeling viewpoint and establish a dialogue with the broader community to focus modeling, field and laboratory investigations toward specific goals.