



UNIVERSITÀ DEGLI STUDI DI GENOVA

DICAT

Dipartimento di Ingegneria delle Costruzioni, dell'Ambiente e del Territorio

16145 GENOVA - Via Montallegro, 1 - Tel. 39 - 010 3532491 - Fax 39 - 010 3532546

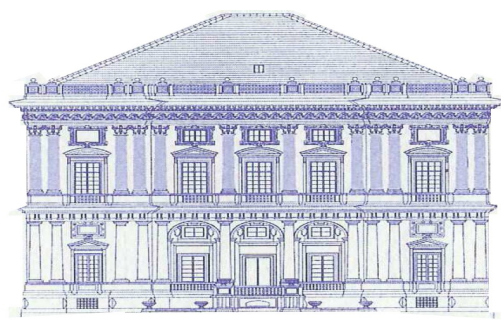
AVVISO DI SEMINARIO

“Evolution of Incised Stream Systems in the Midcontinental USA: Processes and Simulation”

Eddy J. Langendoen

Watershed Physical Processes Research Unit
National Sedimentation Laboratory
US Department of Agriculture-Agricultural Research Service
Oxford, Mississippi

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Facoltà di Ingegneria
Aula A11, atrio DICAT
Villa Giustiniani Cambiaso



Per informazioni contattare
Michele Bolla Pittaluga, miki@dicat.unige.it



“Evolution of Incised Stream Systems in the Midcontinental USA: Processes and Simulation”

Cultivation of the Midcontinental USA during European settlement resulted in large scale erosion of the fine-grained landscape. Sediment accumulated in streams resulting in reduced conveyance of water and sediment and increased flooding. To improve drainage many of these stream systems were channelized in the early and mid 20th century. Channel straightening and enlargement increased channel slope and introduced head-ward migrating knick points or head cuts, thus initiating a long process of channel adjustment. This adjustment process has been widely studied and it has been described by conceptual channel evolution models (CEMs), which define the following evolutionary stages: incision, widening, aggradation, and finally equilibration. However, CEMs can only qualitatively describe the adjustment process. They cannot express: (a) the duration of adjustment; (b) final channel dimensions; or (c) final sediment loads. However, computer models can be used to determine these parameters if they can accurately simulate the governing processes. This presentation will present the processes that govern channel adjustment within the agricultural landscape of the Midcontinental USA, and how they are modeled by the channel evolution computer model CONCEPTS.

