

# ***MODELLAZIONE NUMERICA DI PROCESSI IDRODINAMICI PER DIGHE PORTUALI***

*Giovanna Donnarumma*

*Fabio Dentale*

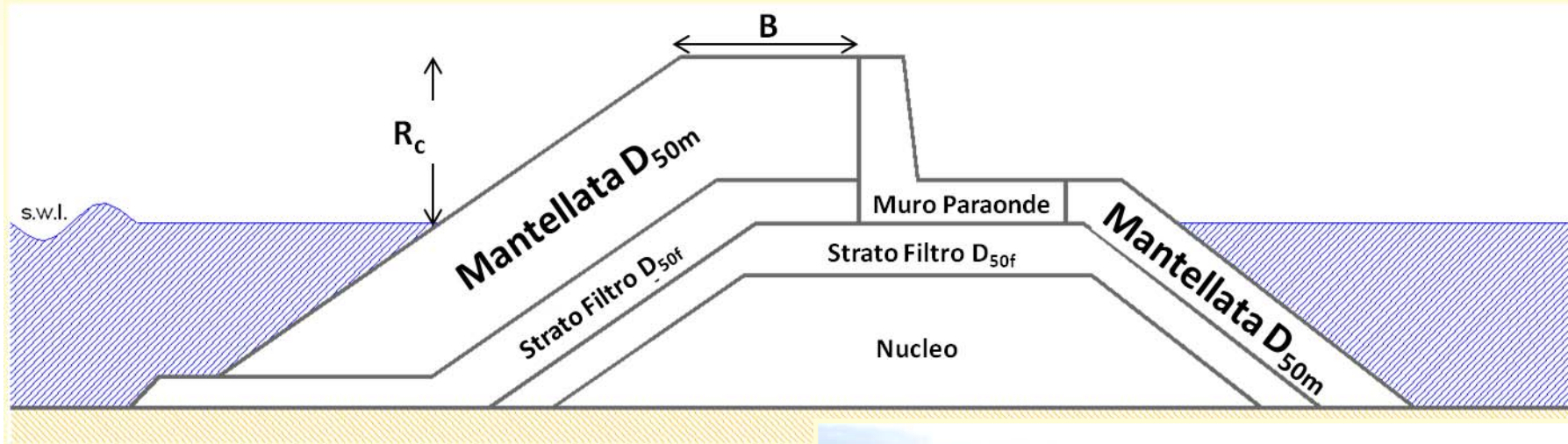


**C.U.G.R.I.**

Consorzio inter-Universitario  
per la Previsione e Prevenzione dei Grandi Rischi  
Università di Salerno - Università di Napoli "Federico II"



## Struttura Emersa



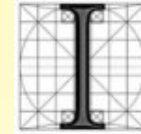
**Risalita – RunUp**

**Sormonto – Overtopping**

**Riflessione – Reflection**

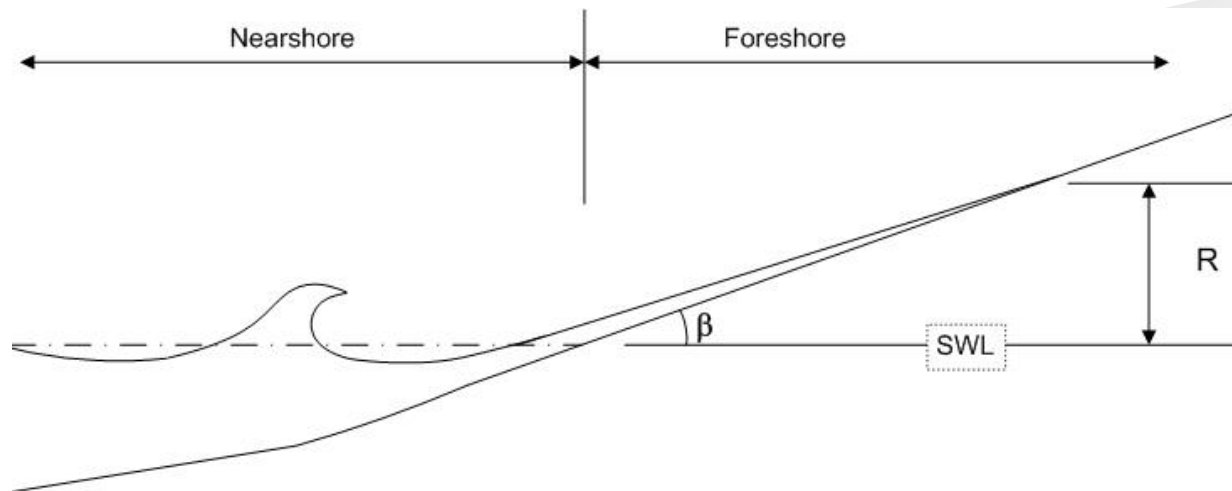
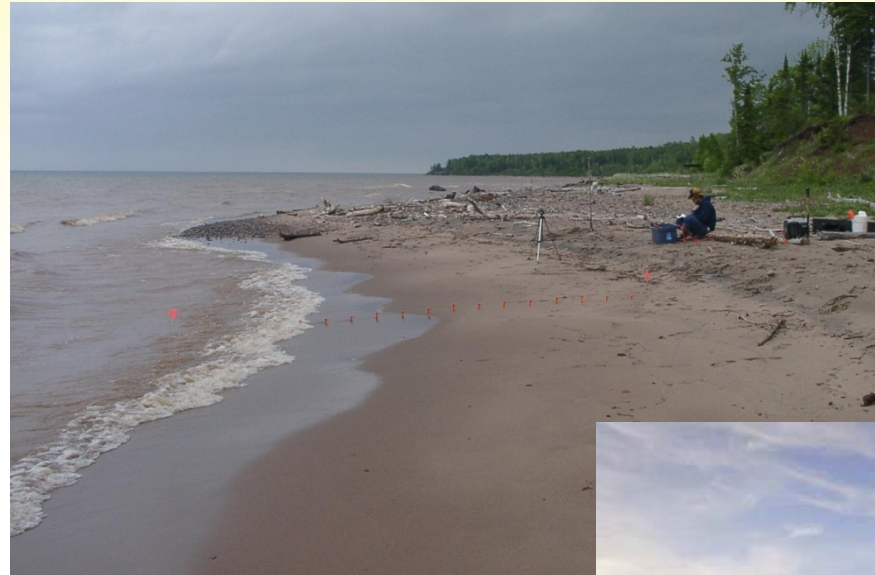
**Stabilità Mantellata – Armour Stability**





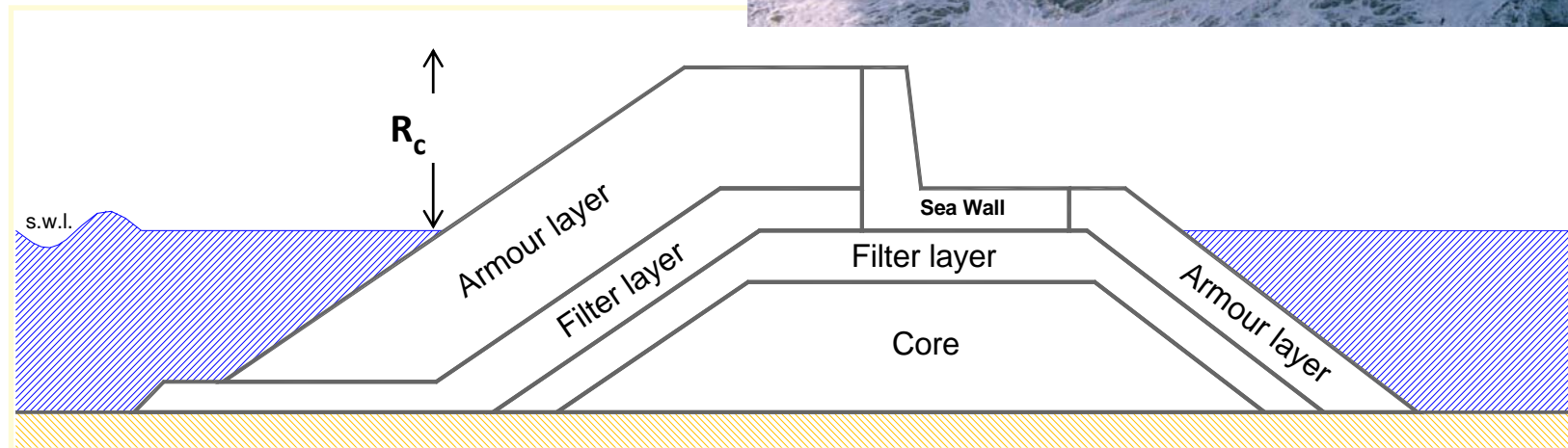
## Run Up

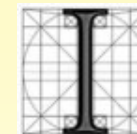
Per Run Up si intende la massima quota di risalita verticale dell'onda sul paramento (o spiaggia) rispetto al livello medio mare.



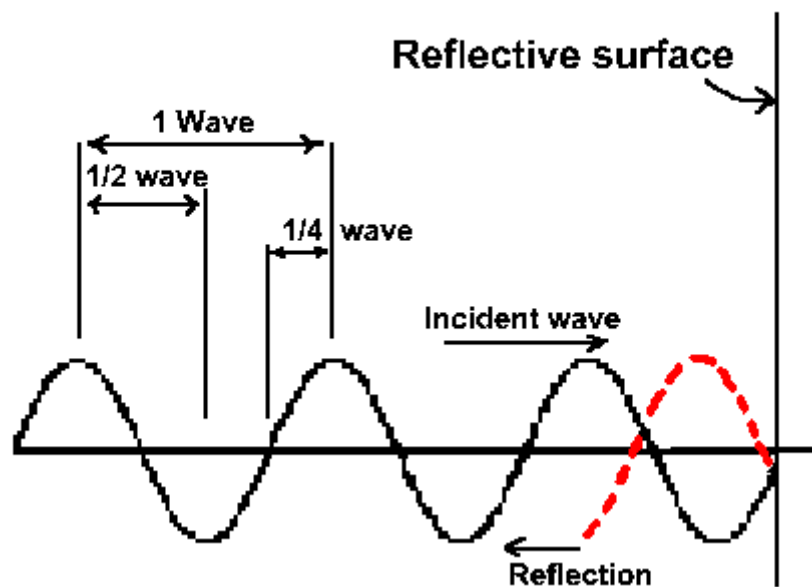
## Overtopping

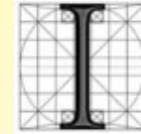
Con il termine overtopping (tracimazione) si intende la portata d'acqua che scavalca la cresta della struttura per effetto del moto ondoso.



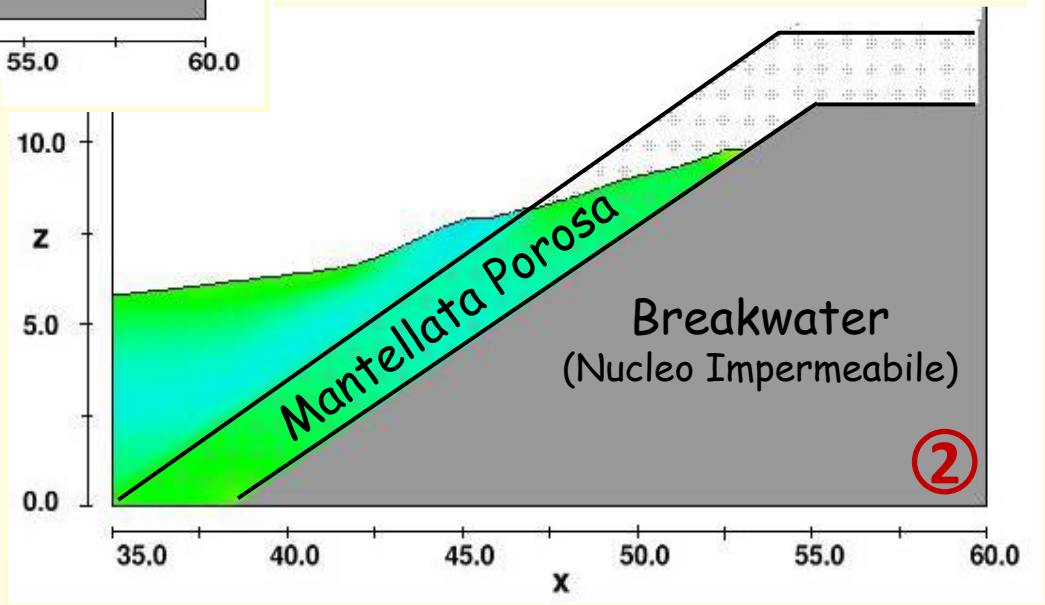
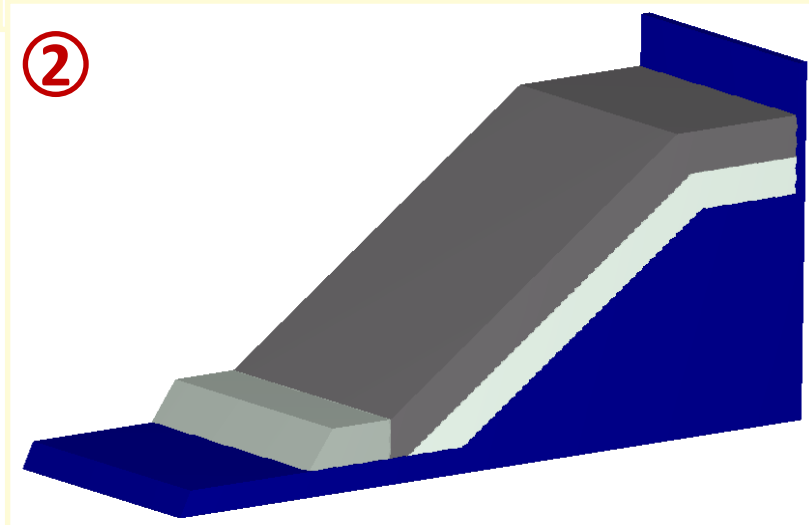
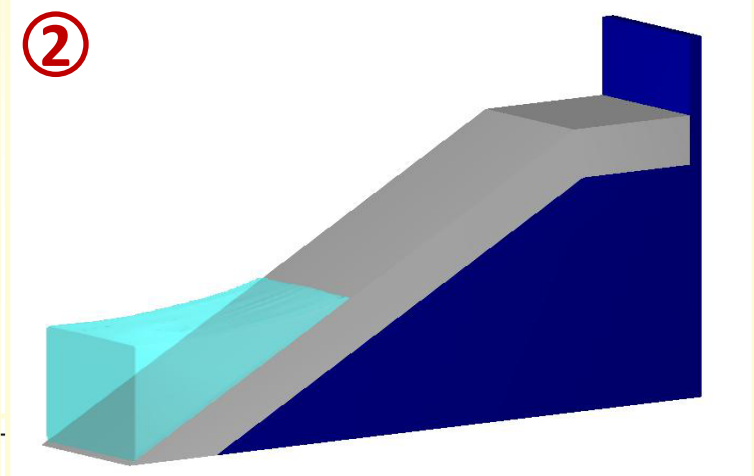
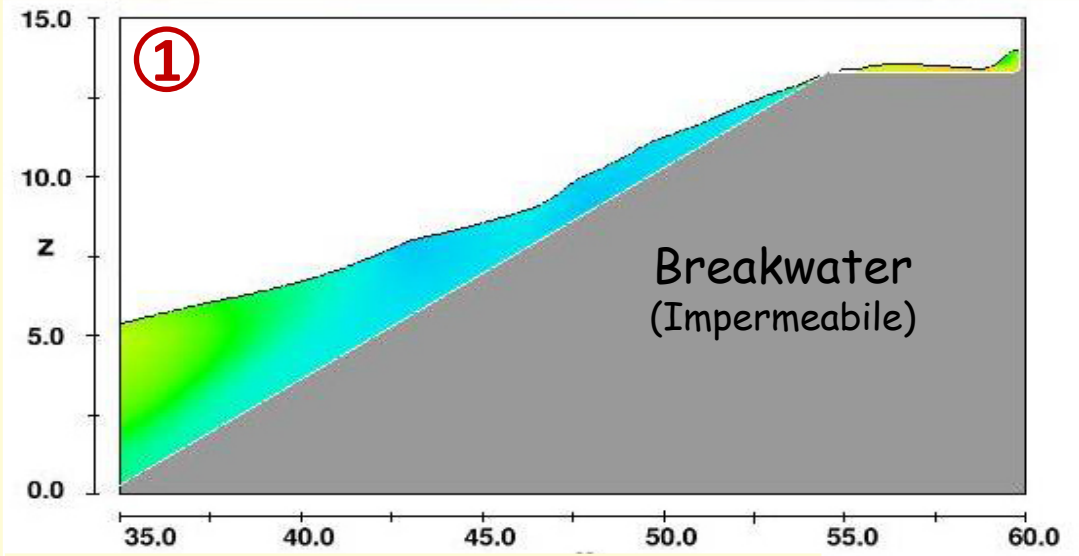


## Riflessione

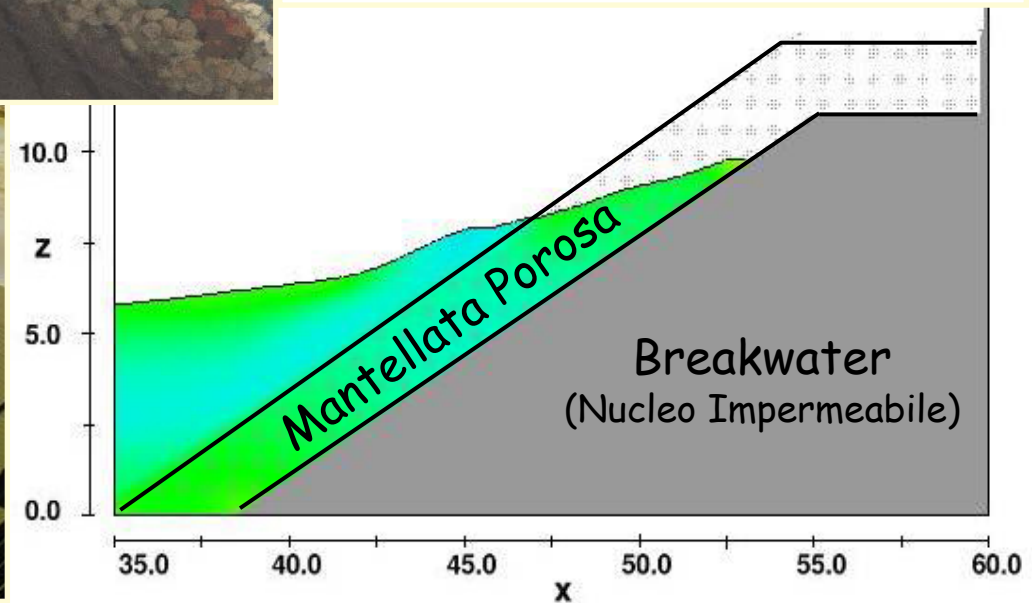
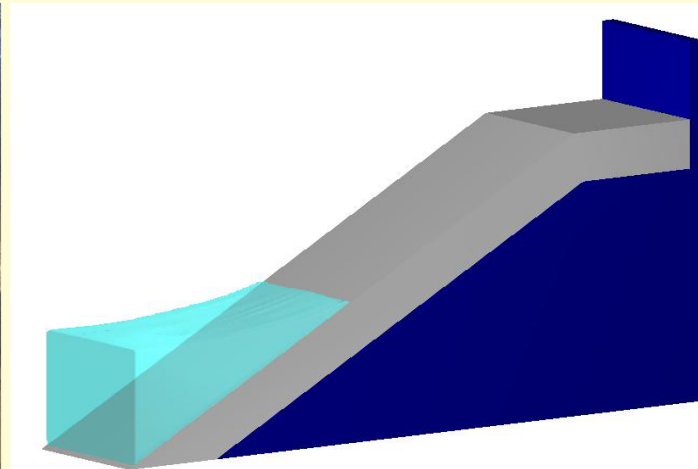
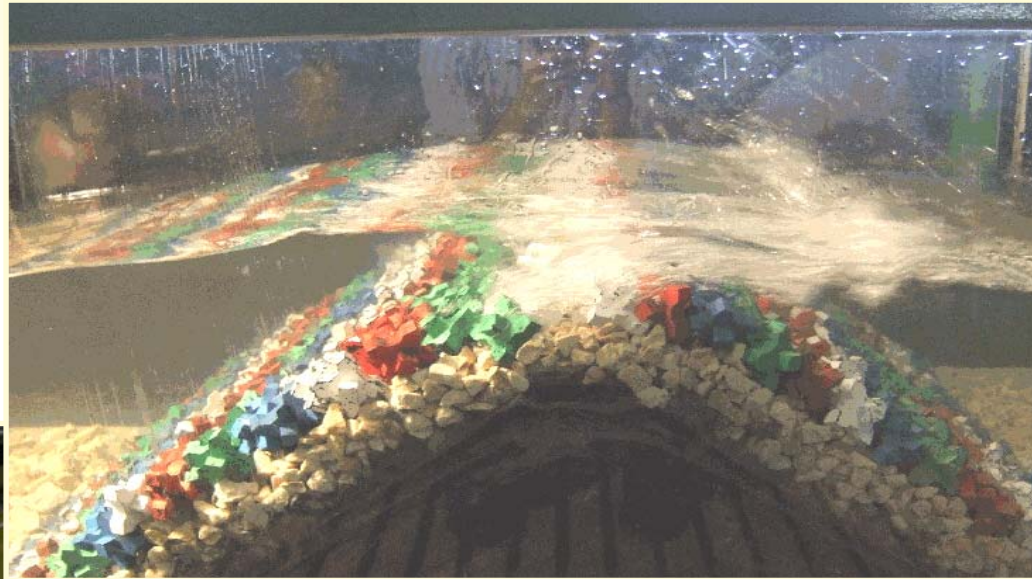


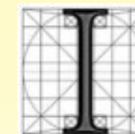


## Stato dell'arte Modellazione Numerico



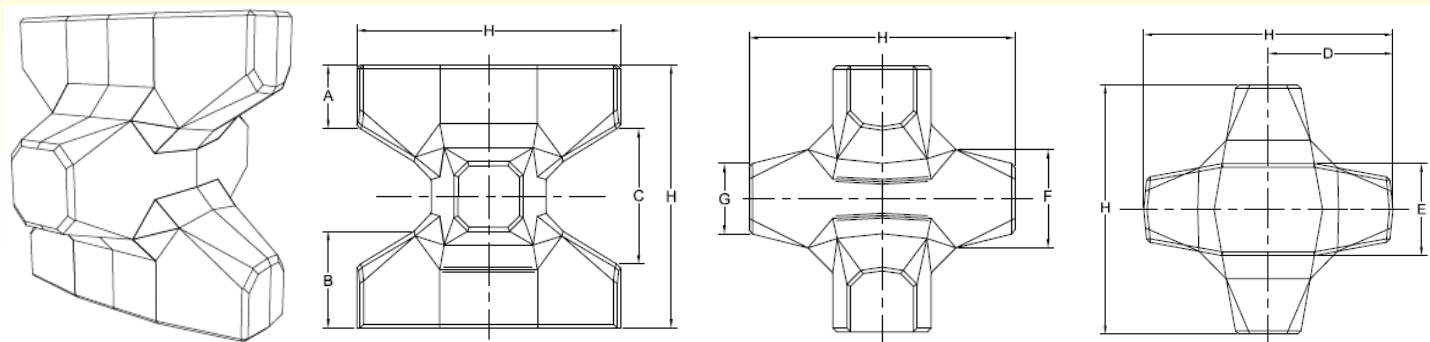
## Confronto Fisico - Numerico



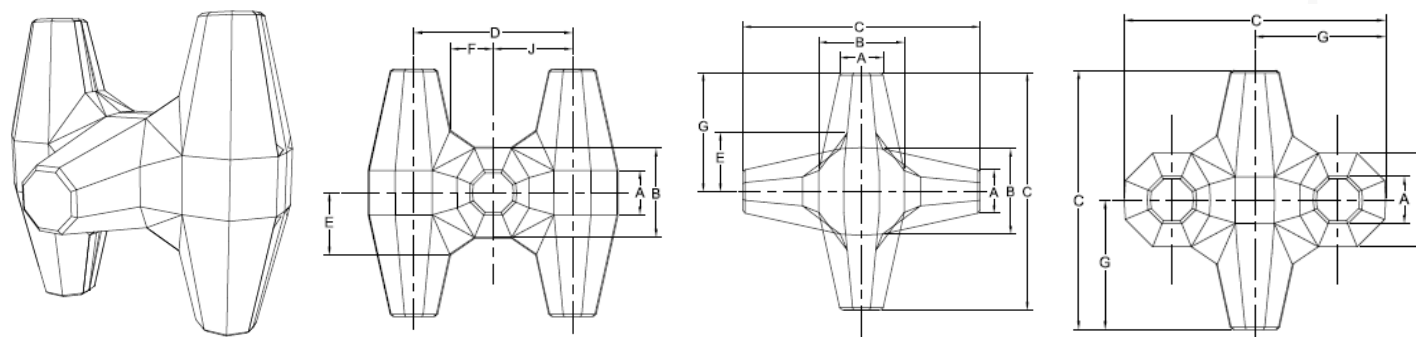


## Schede Tecniche

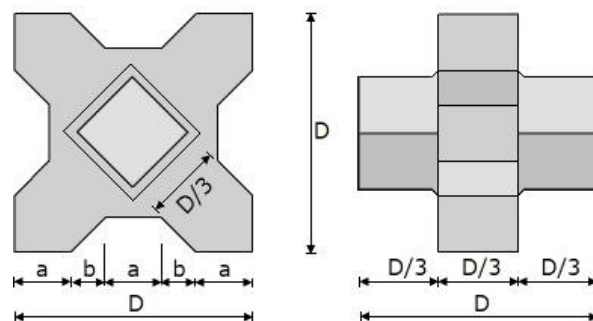
Accropode™



Core-loc™

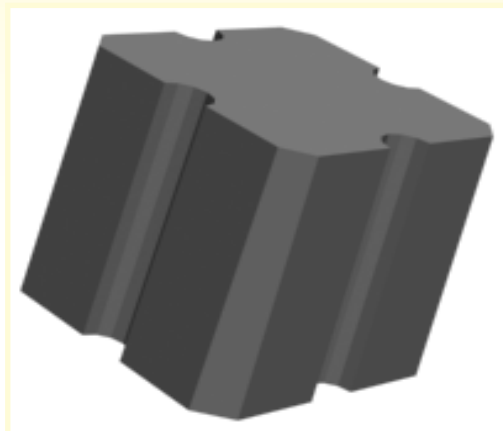


Xbloc®





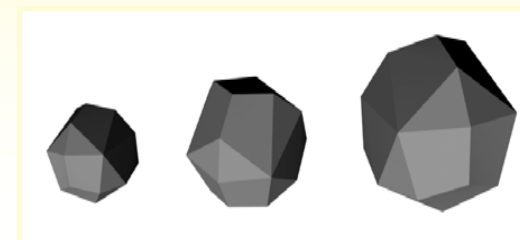
## Elementi Virtuali



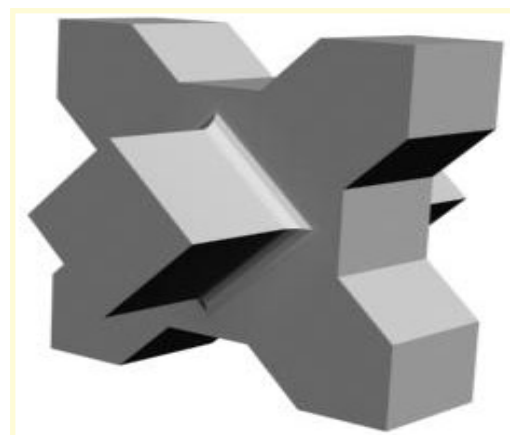
Cubo Antifer



Tetrapodo



Rocce Naturali



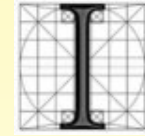
Xbloc®



Accropodo™



Core-loc™

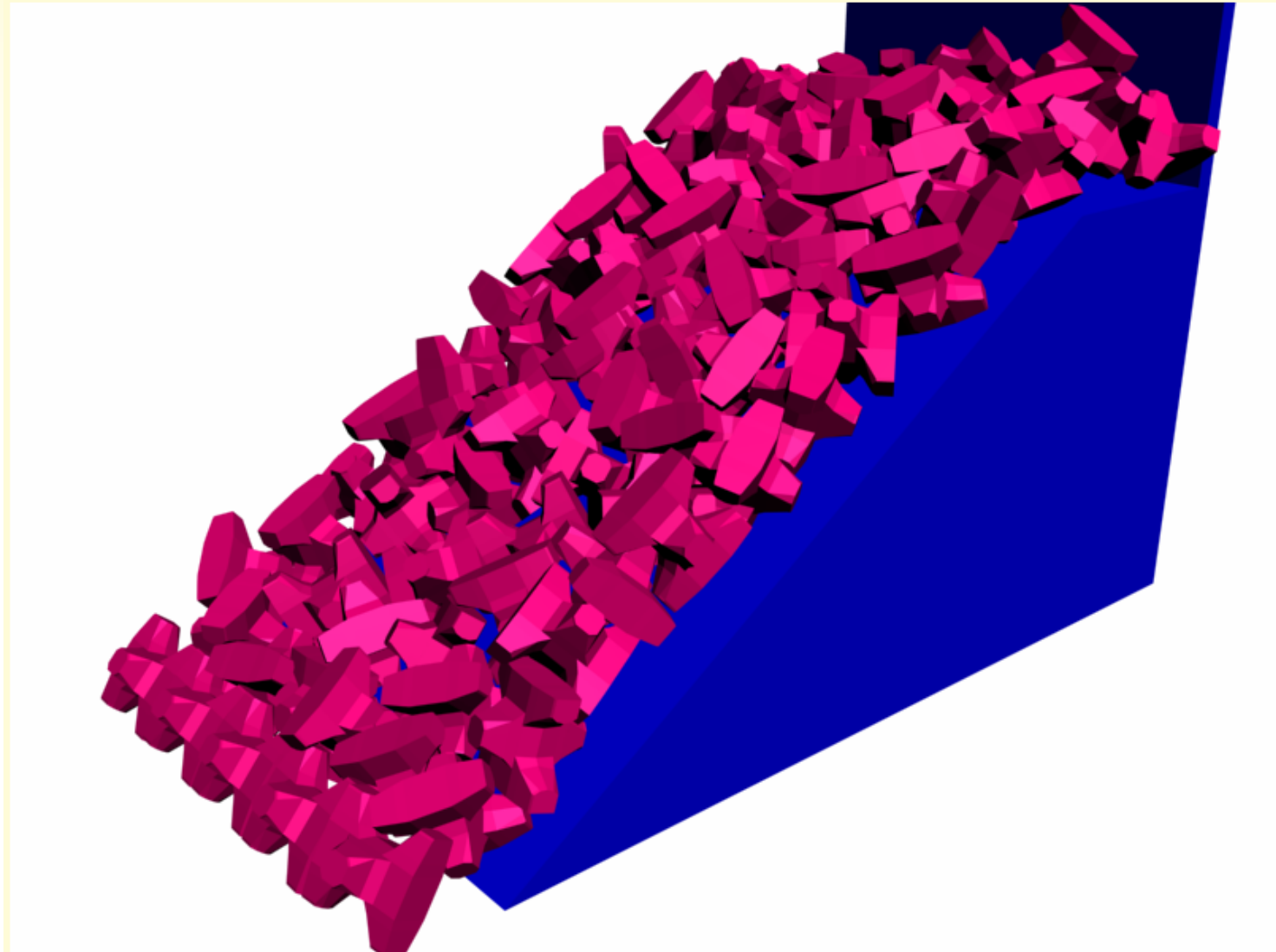


## Modello Virtuale Semplice

Struttura  
Virtuale

con

Mantellata



## Modello Virtuale Complesso

Struttura  
Virtuale

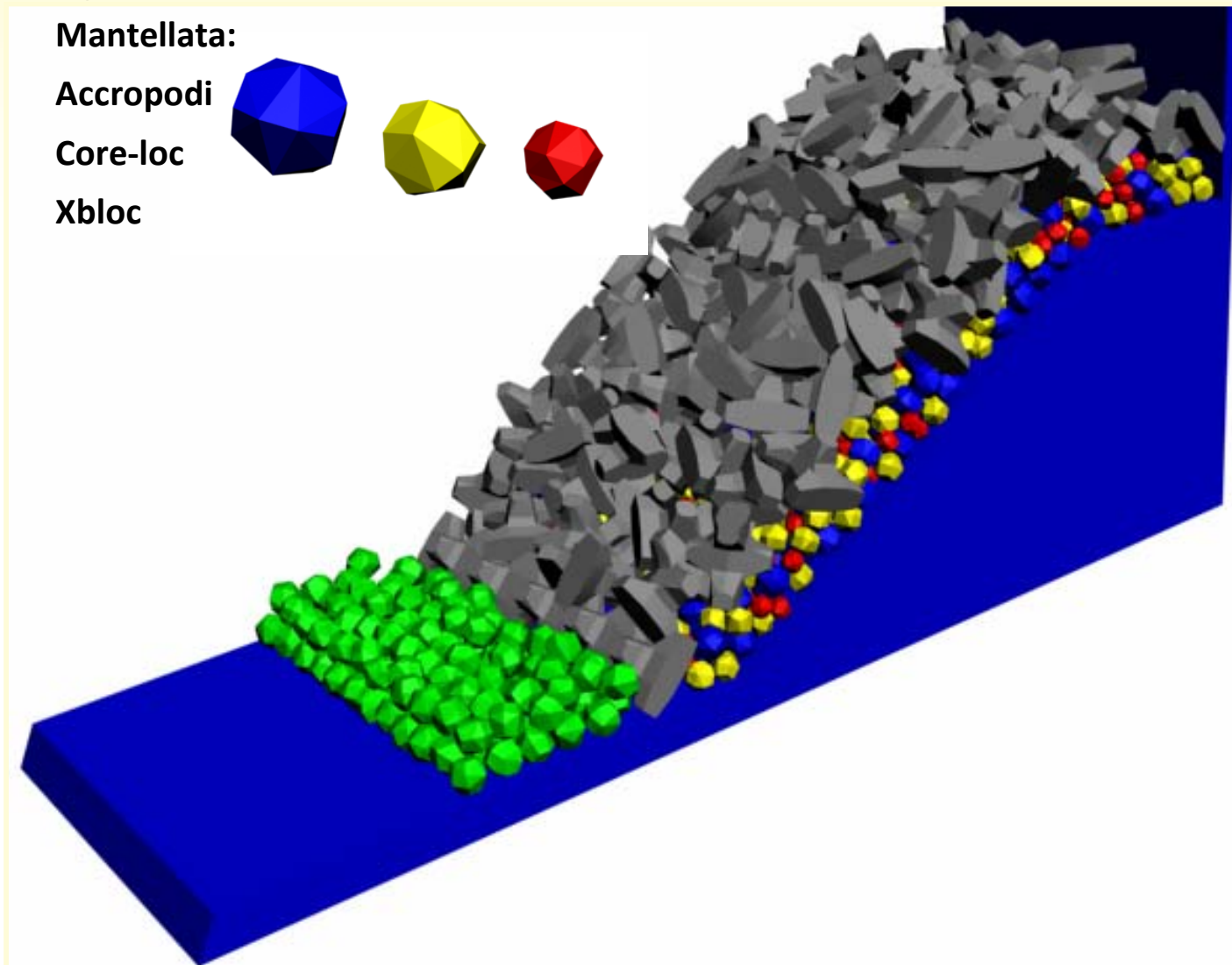
con

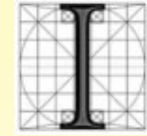
Mantellata

Filtro

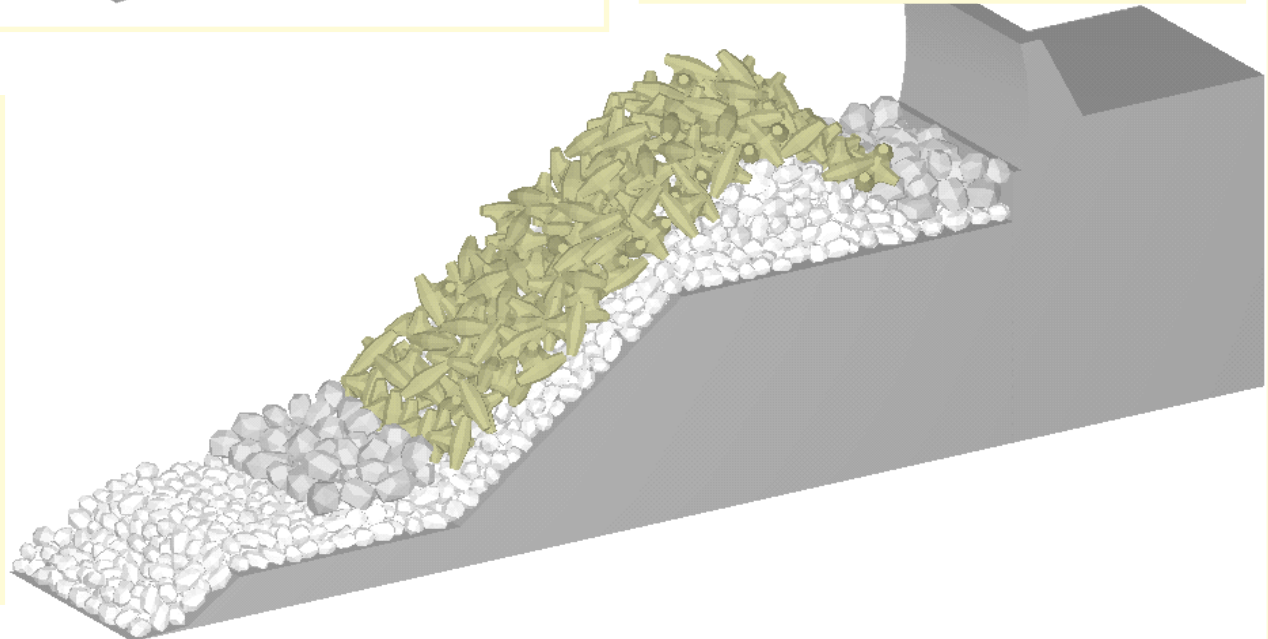
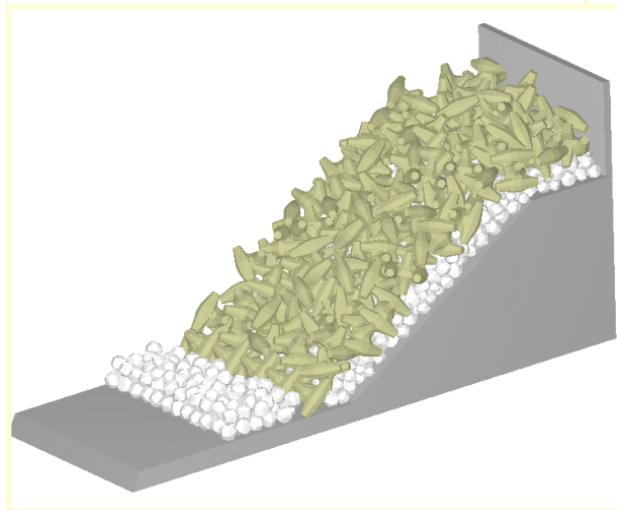
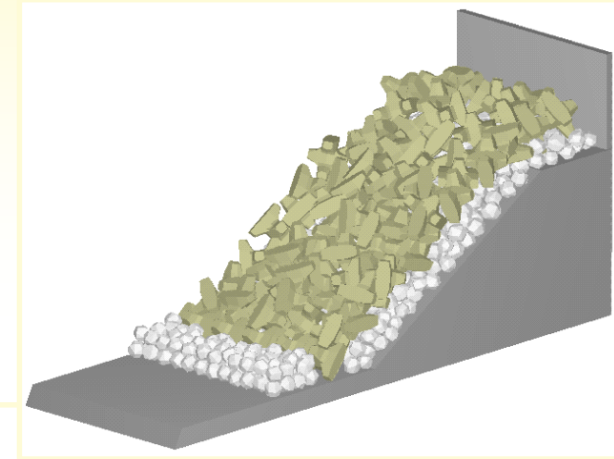
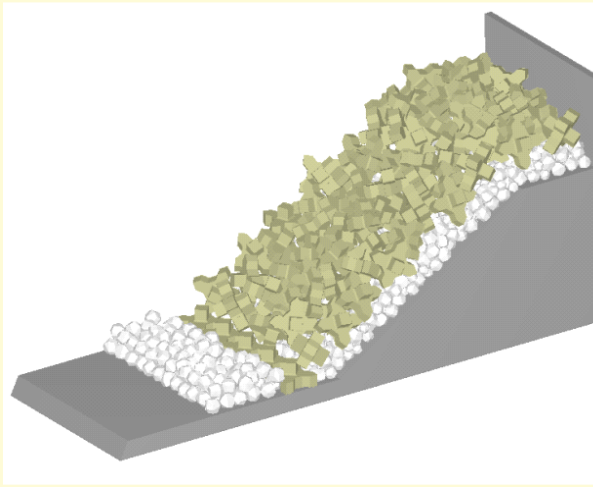
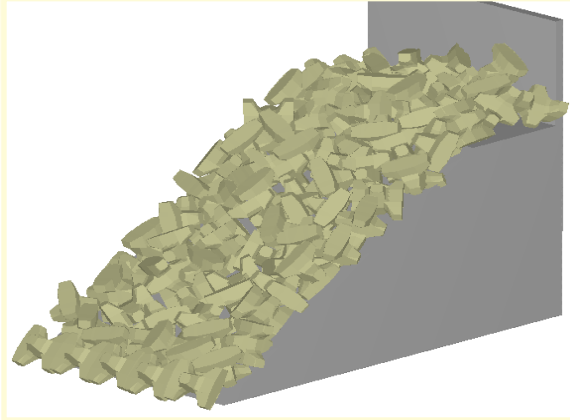
e

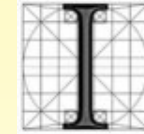
Protezione  
al  
piede



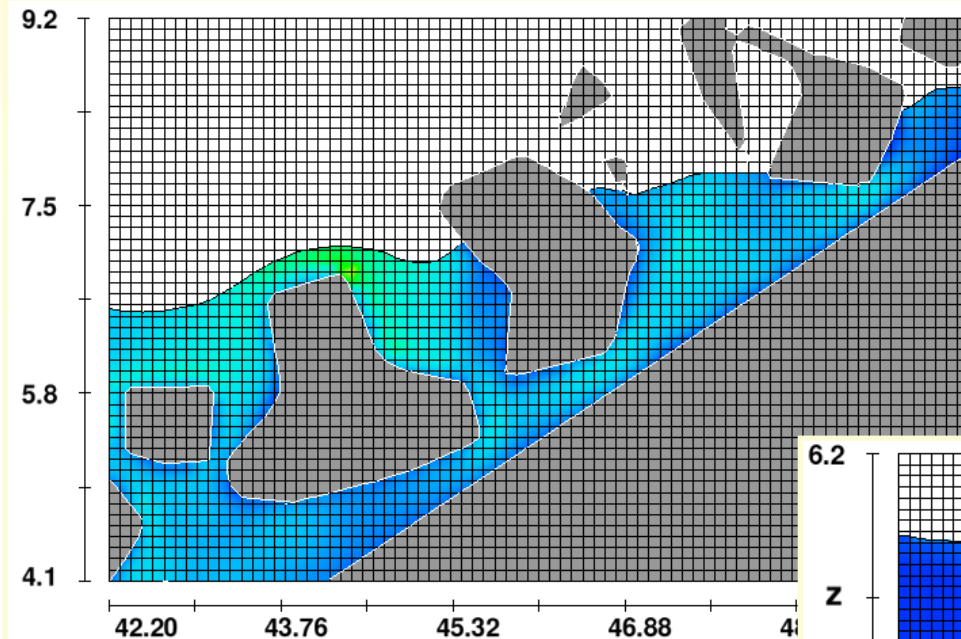


## Opere Virtuali



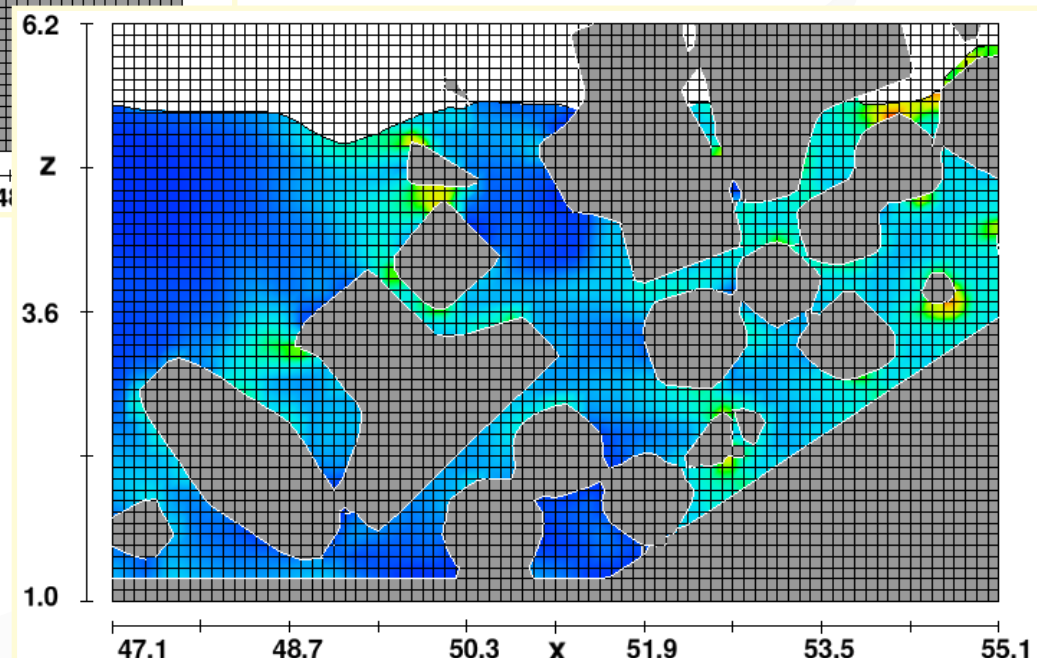


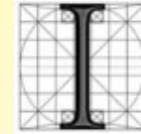
## Mesh di Calcolo



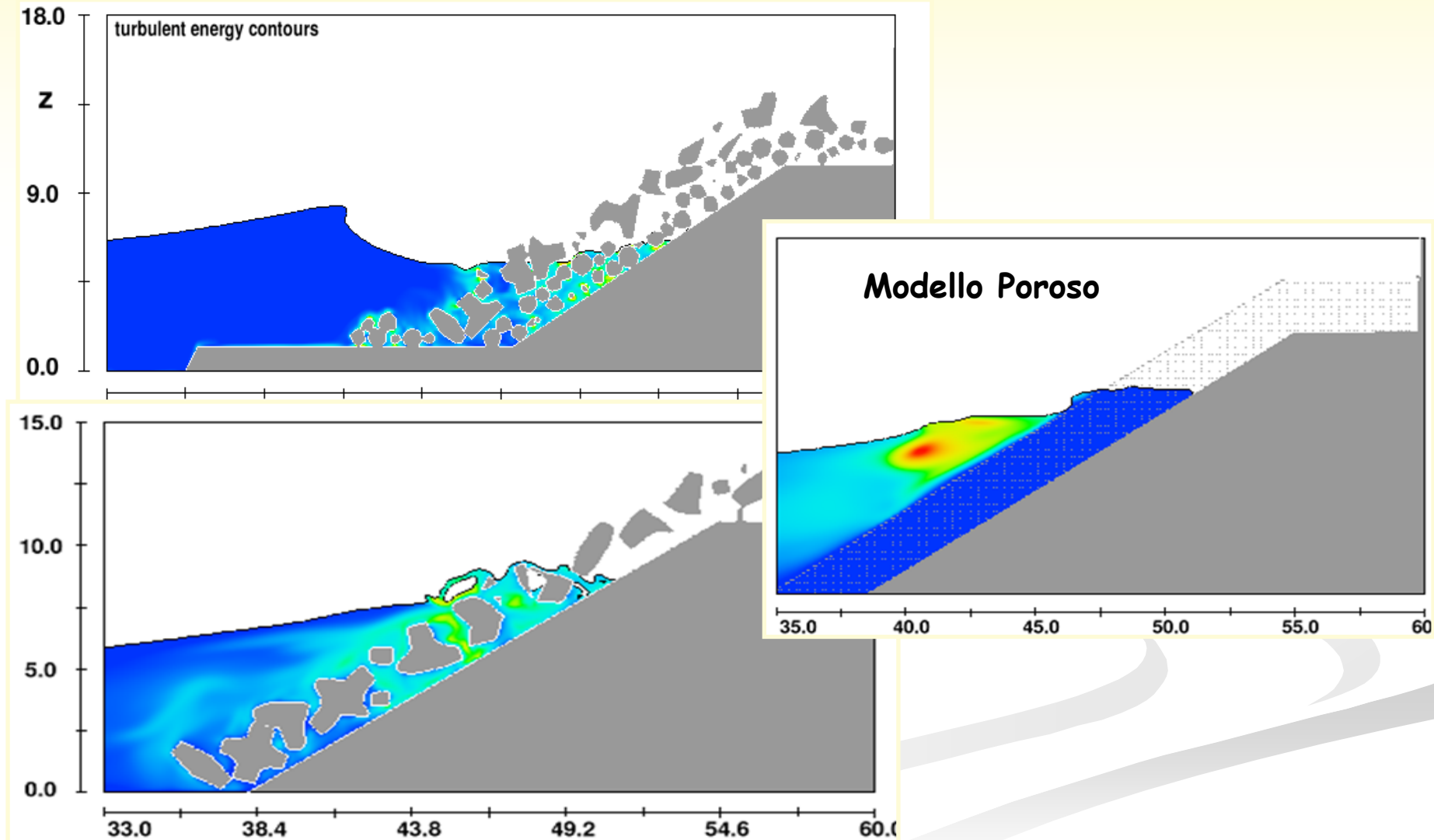
Struttura Virtuale  
con mantellata:  
numero di punti di  
calcolo della mesh  
localizzata

Struttura Virtuale  
con mantellata, filtro  
e protezione al  
piede: numero di  
punti di calcolo della  
mesh localizzata

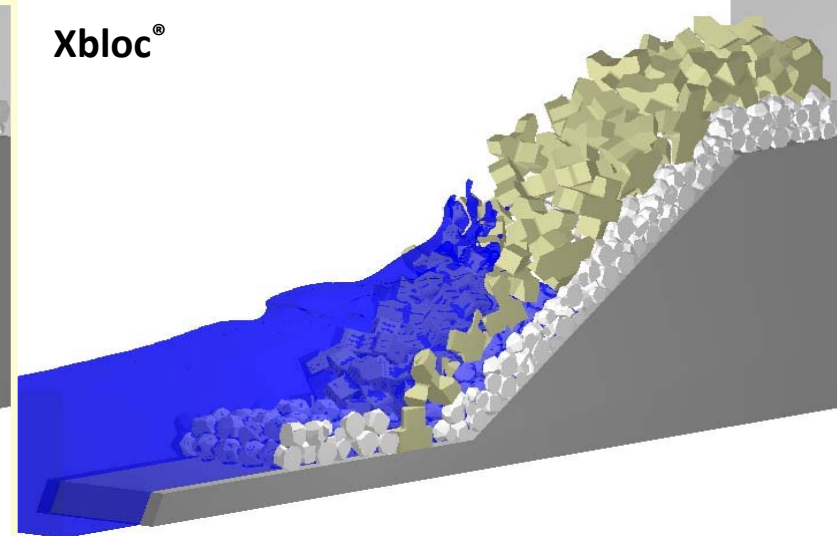
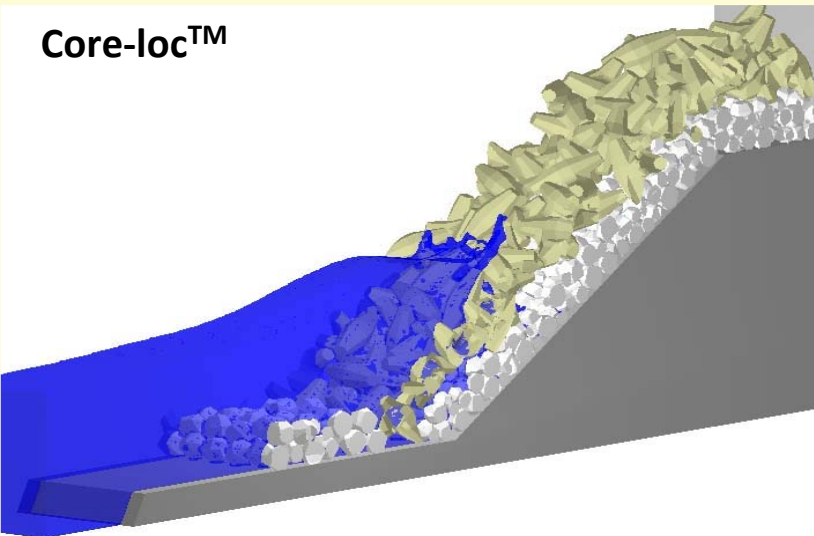
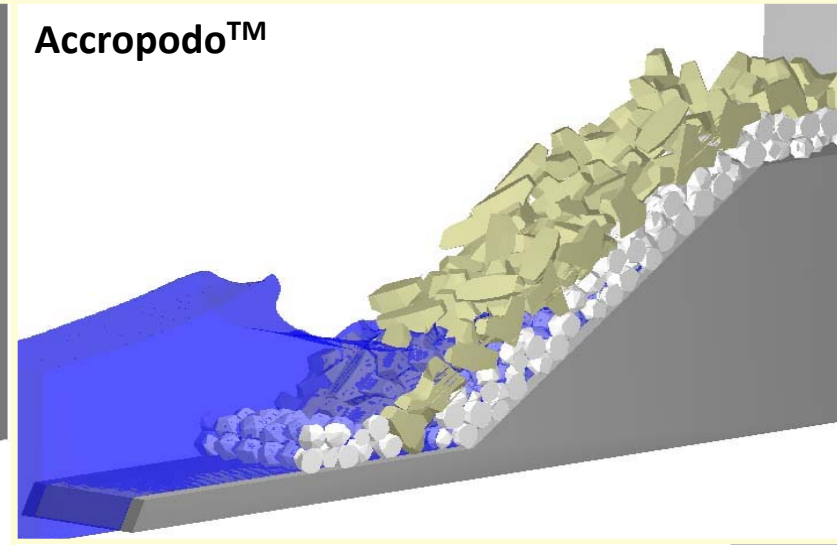
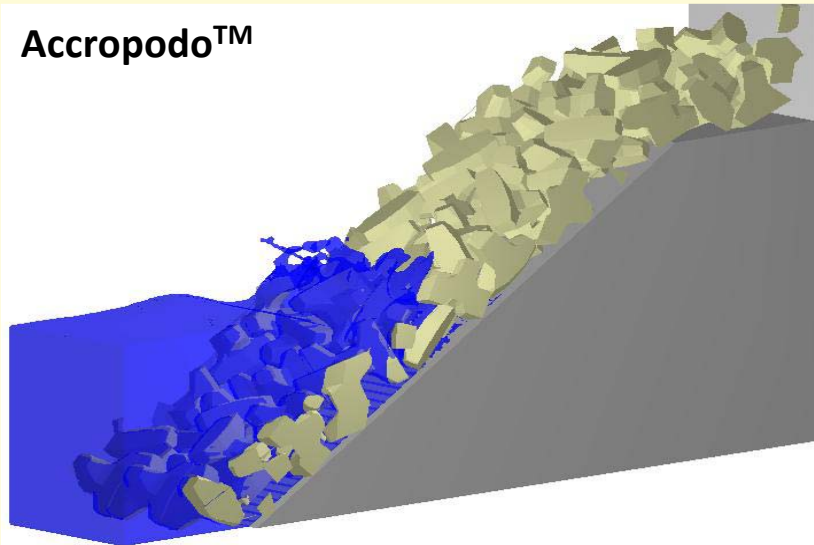




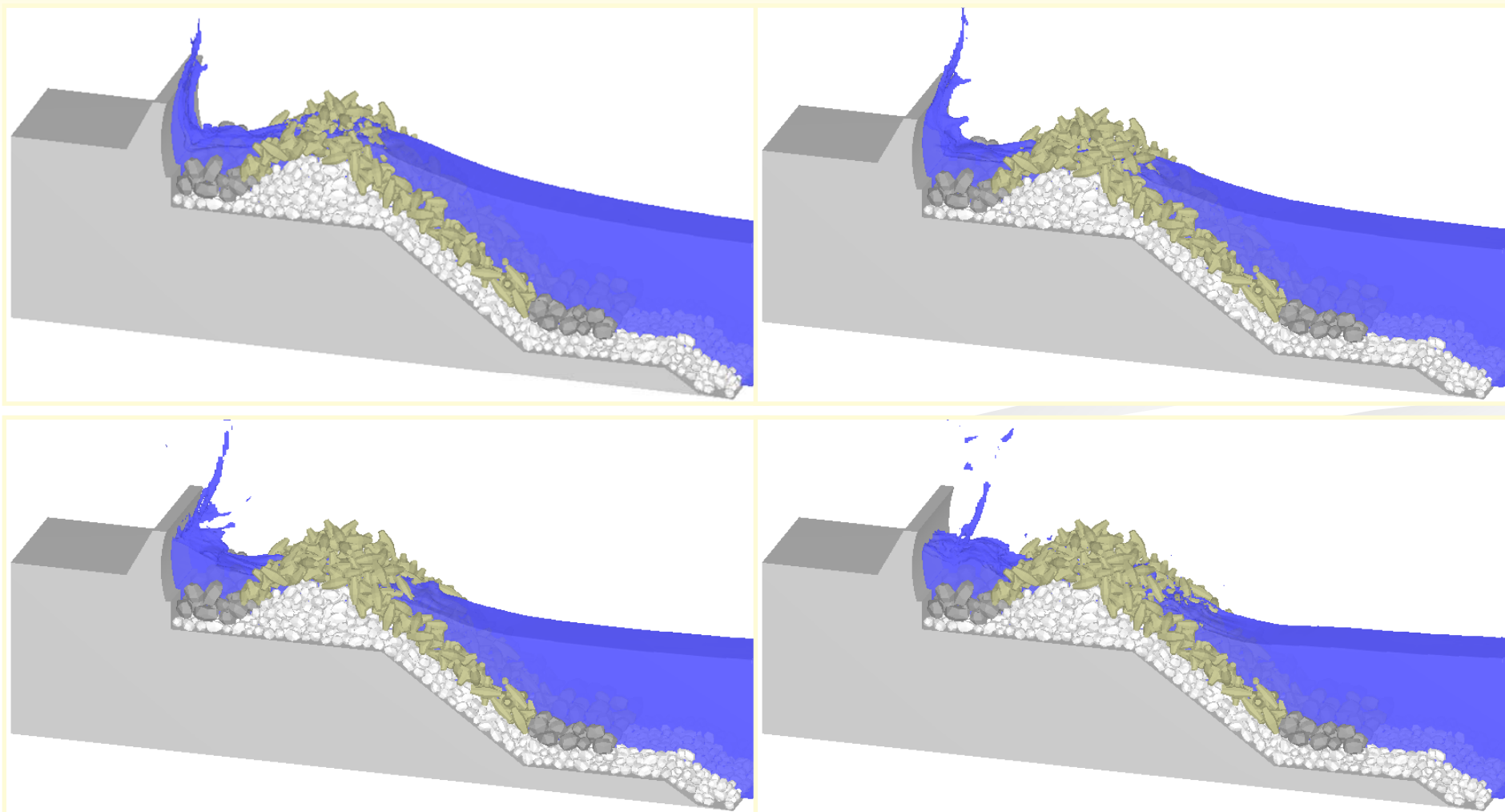
## Confronto con modello poroso



## Evoluzione Superficie Libera

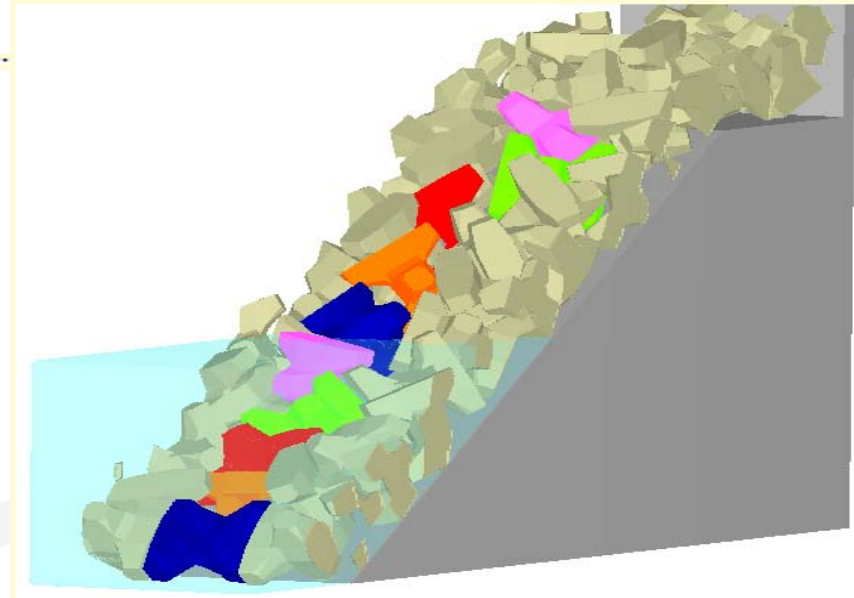
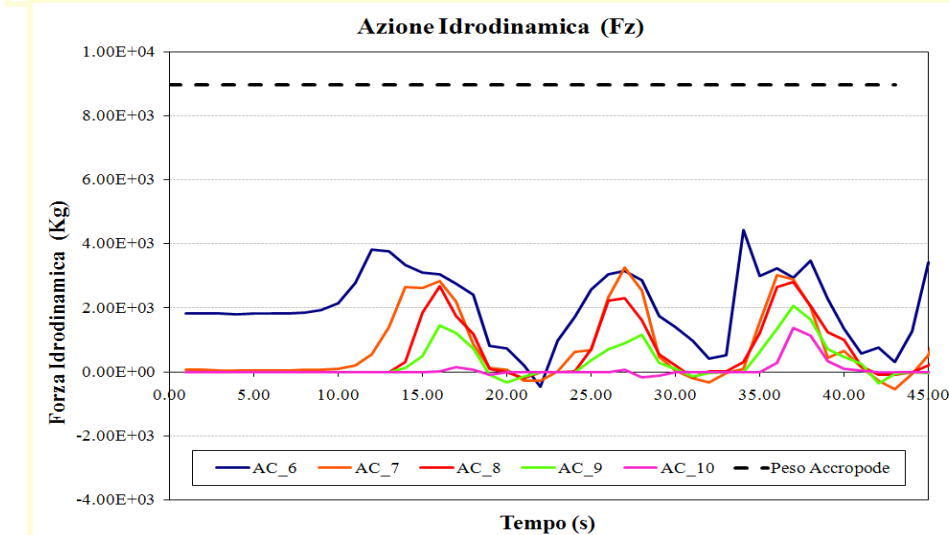
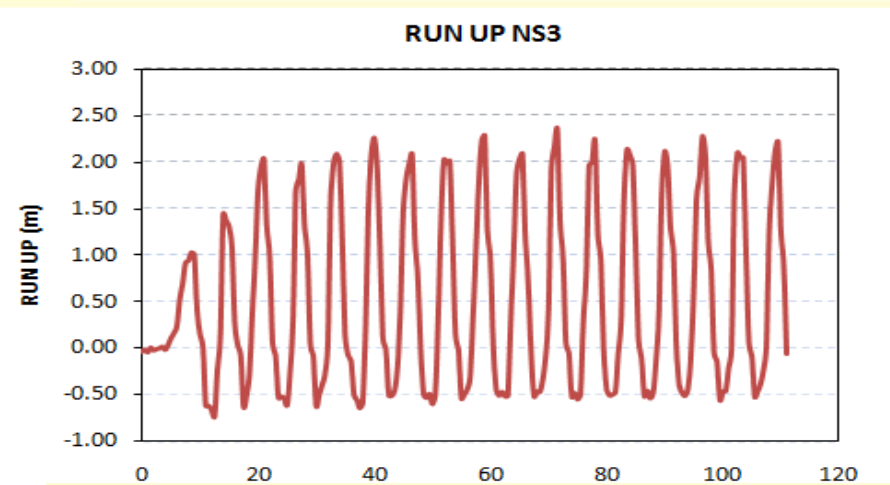
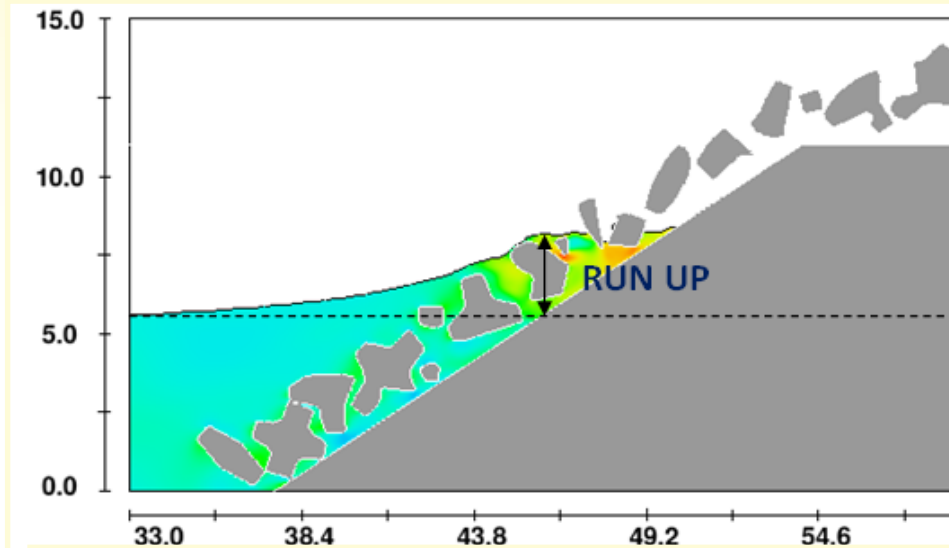


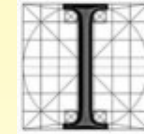
## Evoluzione Superficie Libera



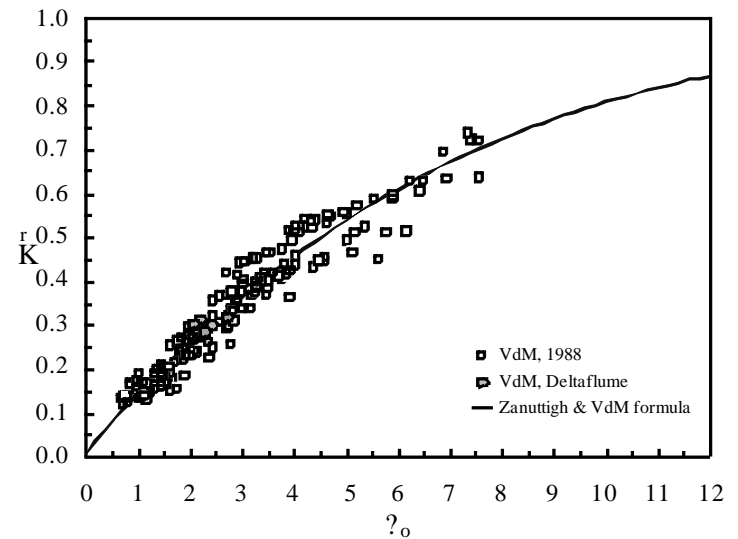
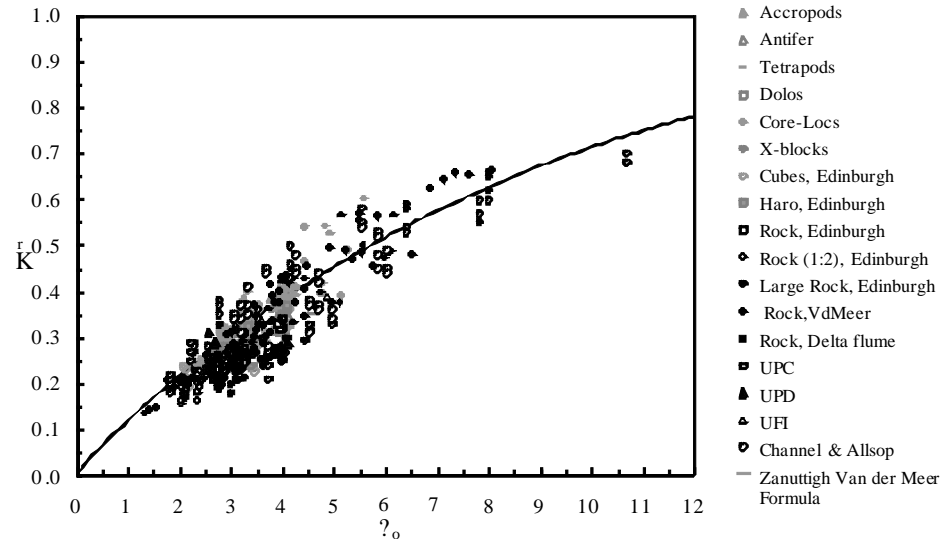
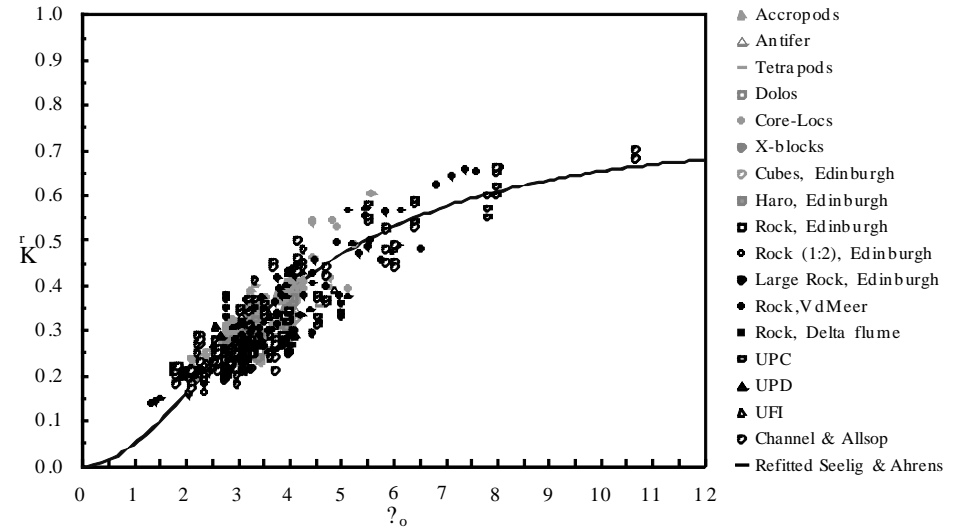
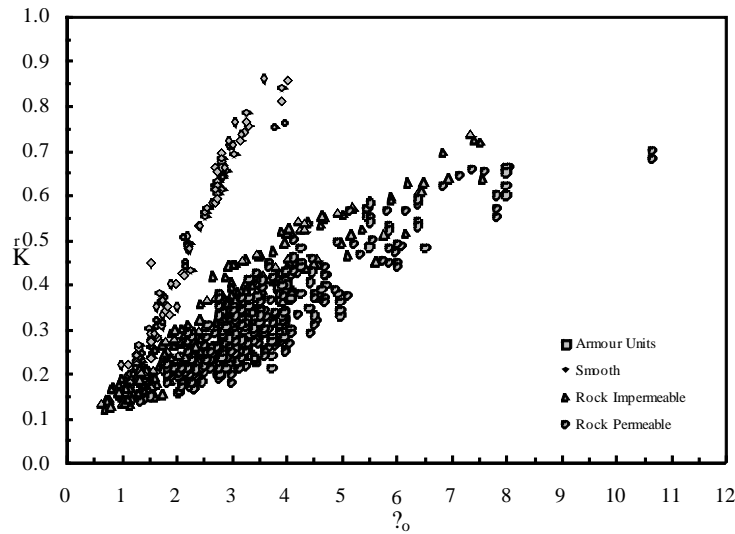


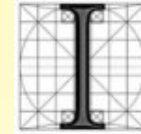
## Run-up – Stabilità Massi



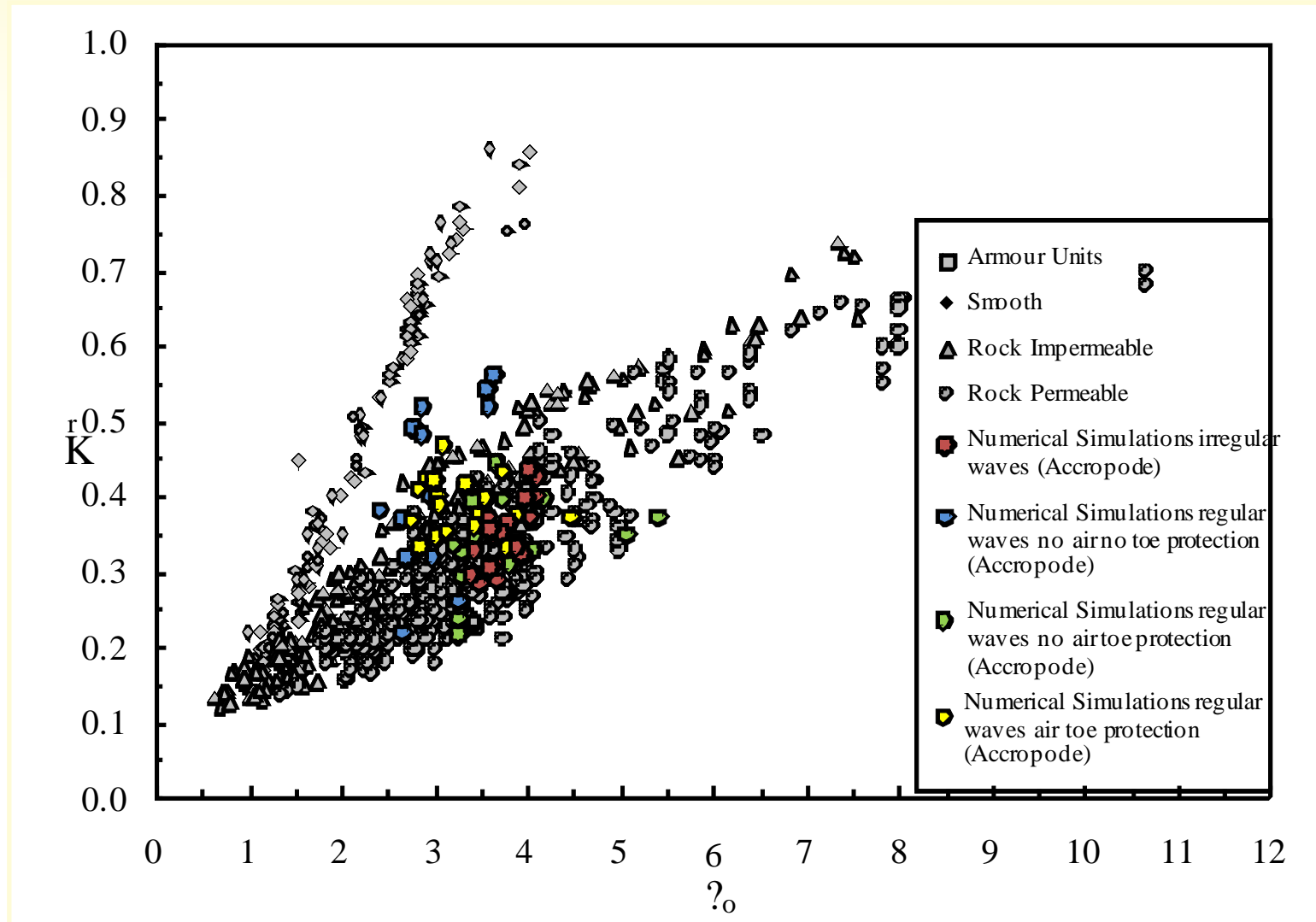


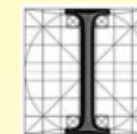
## Validazione Riflessione (Coefficiente)



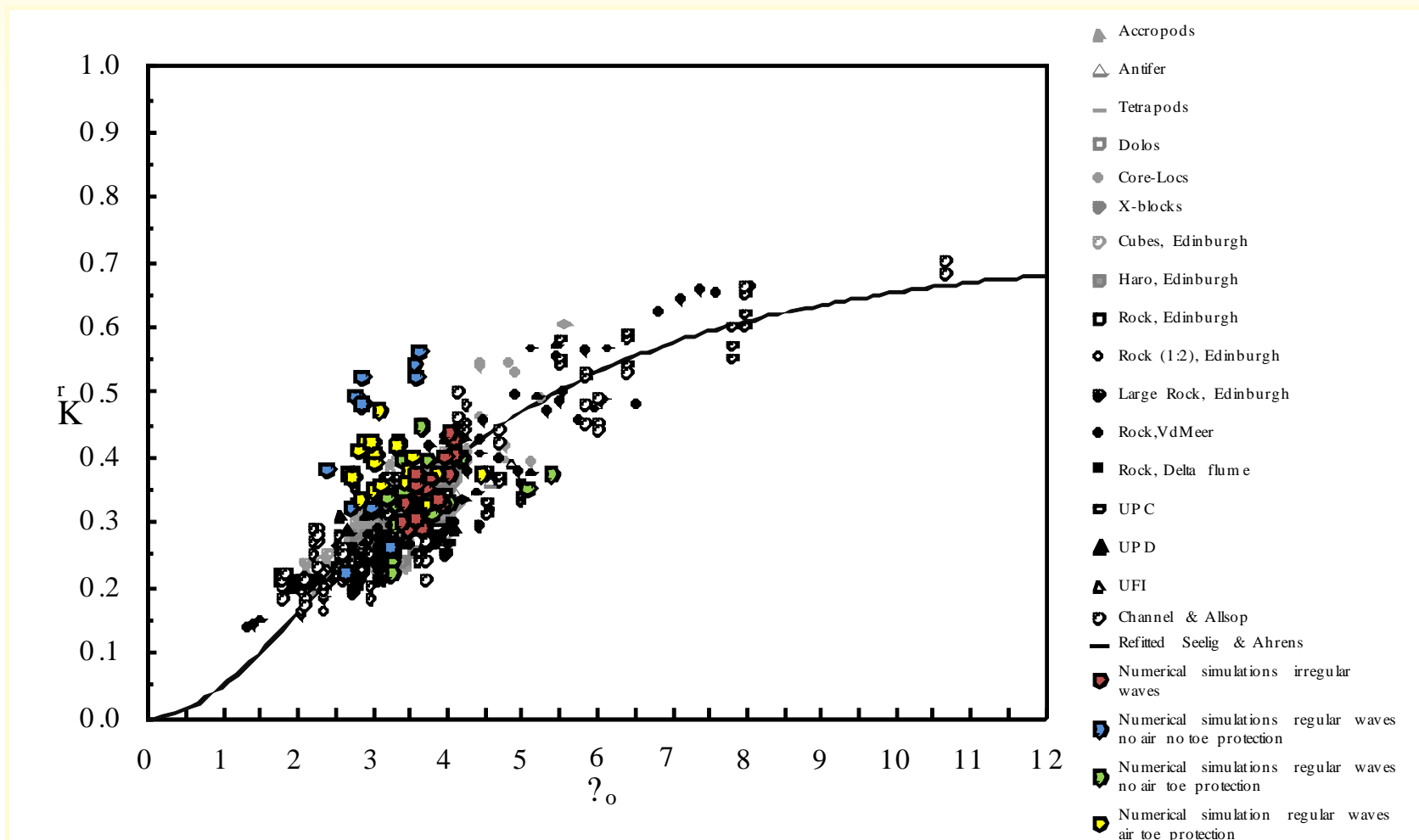


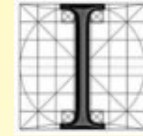
## Validazione Riflessione (Coefficiente)



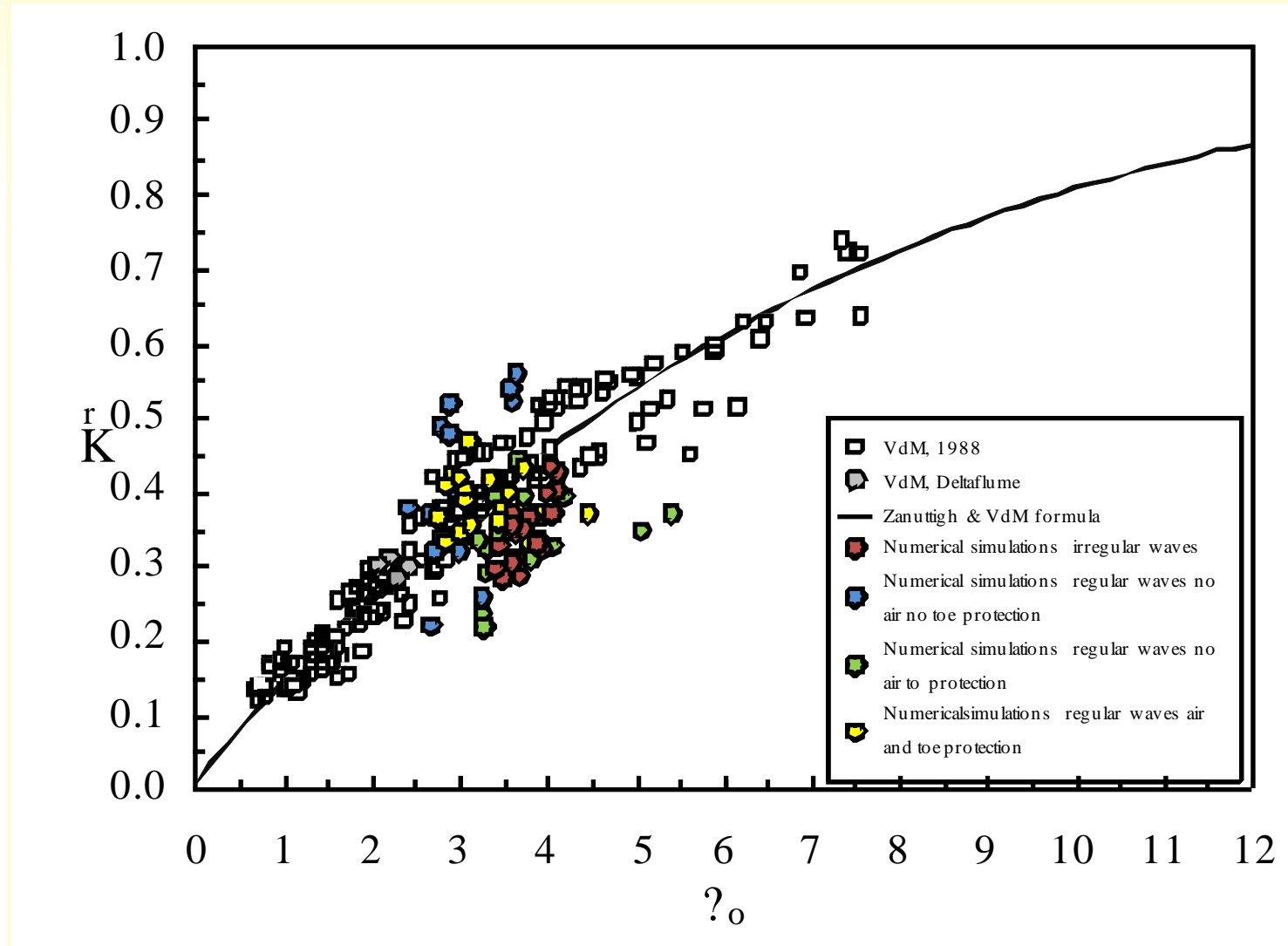


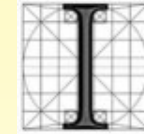
## Validazione Riflessione (Coefficiente)





## Validazione Riflessione (Coefficiente)





## Validazione Riflessione (Coefficiente)

