

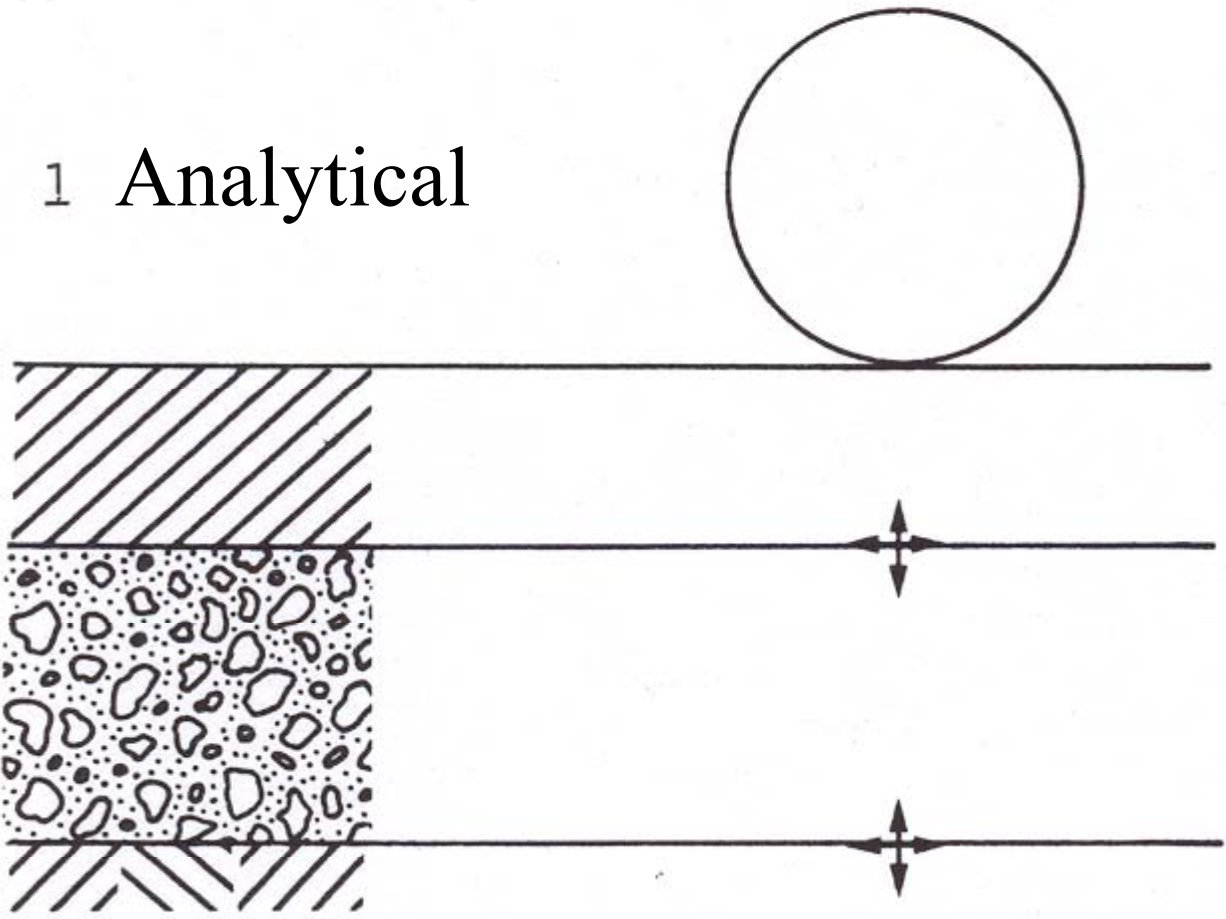


Response

Per Ullidtz
Dynatest International



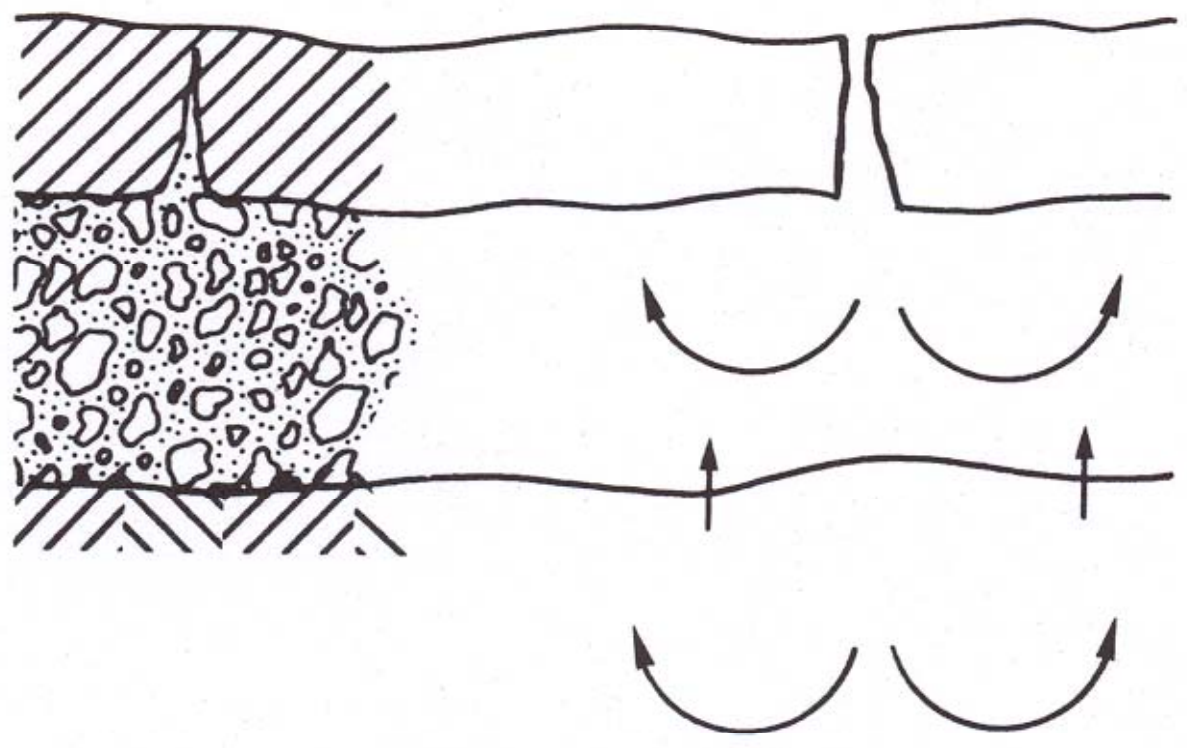
1 Analytical



RESPONSE



2 Empirical



PERFORMANCE
(STRUCTURAL & FUNCTIONAL)



Assumptions

1. Static equilibrium
2. Compatibility (continuity)
3. Hooke's law

4th order differential equation

Boundary conditions



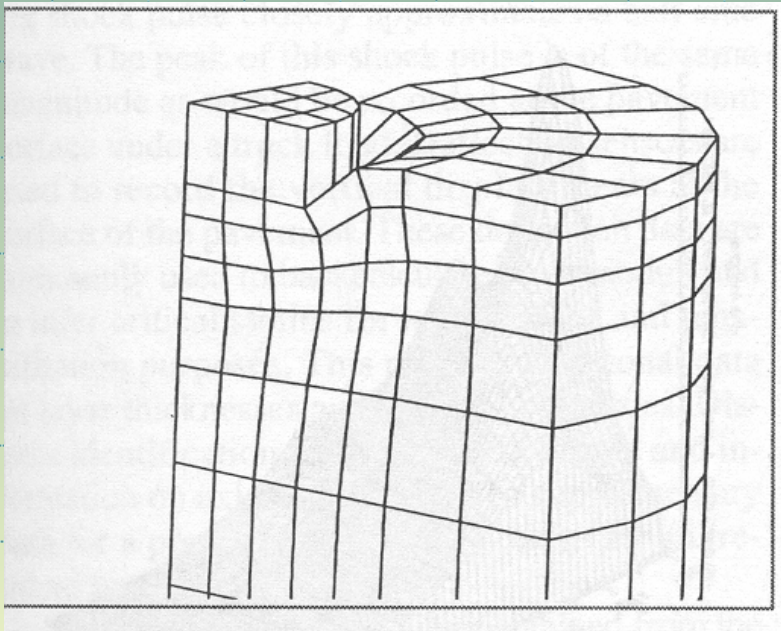
Reality

1. Dynamic equilibrium
2. Particulate materials
3. Viscos, visco-elastic and plastic deformations, non-linear, anisotropic
4. Boundary conditions???

Is the theory useless???



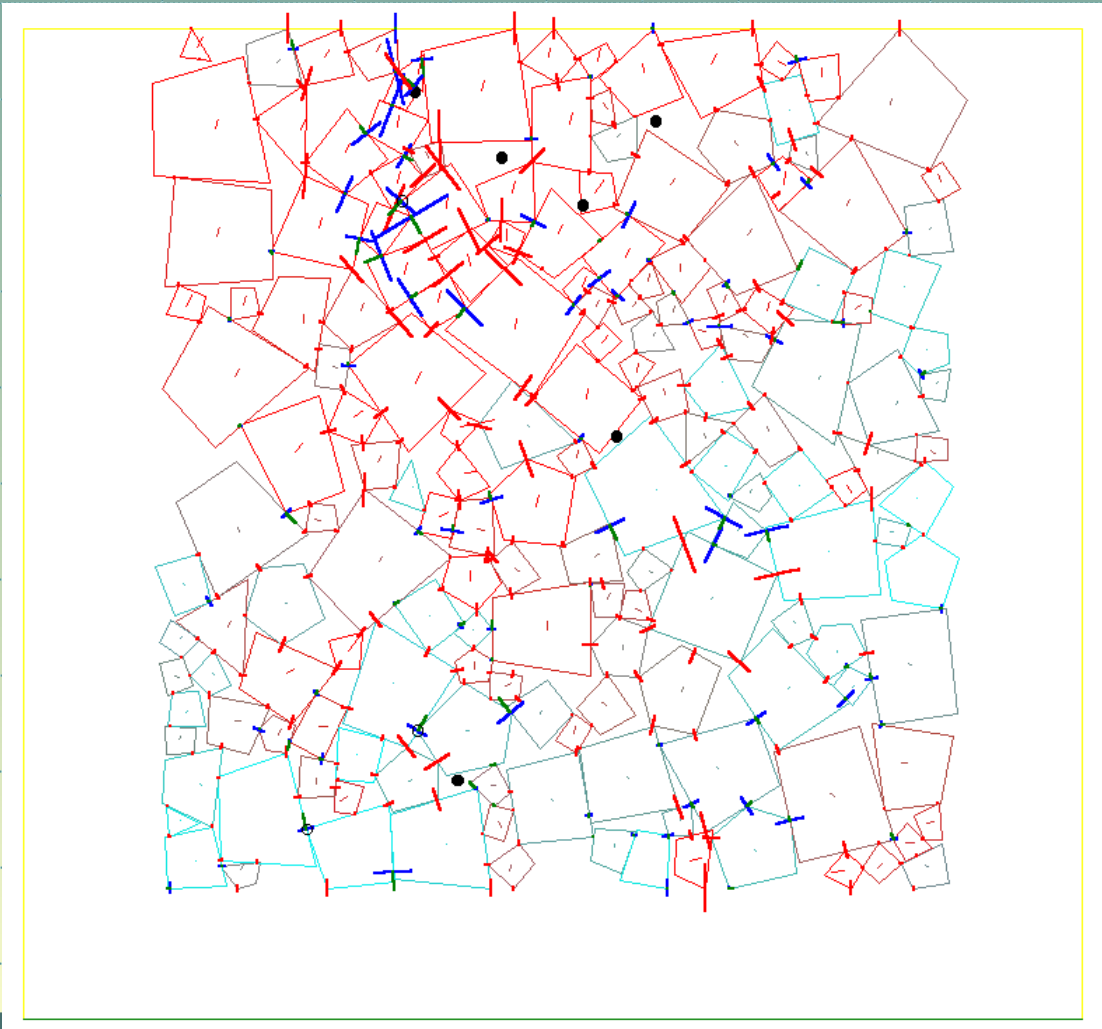
Finite Element Method



- ◆ Non-linearity
- ◆ 3D
- ◆ Dynamic
- ◆ Visco-elastic
- ◆ Elasto-plastic
- ◆ Failure
- ◆



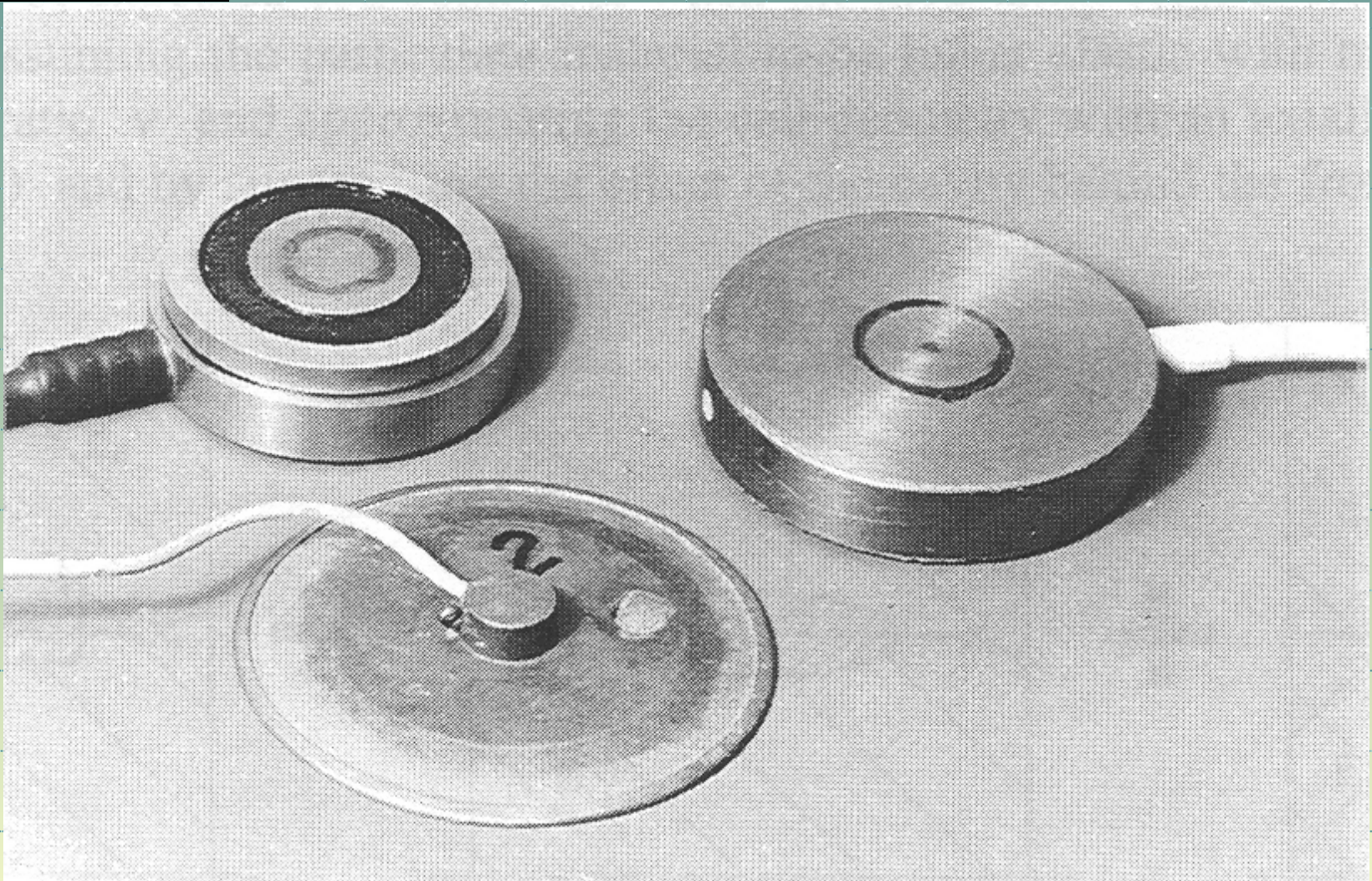
Distinct Element Method

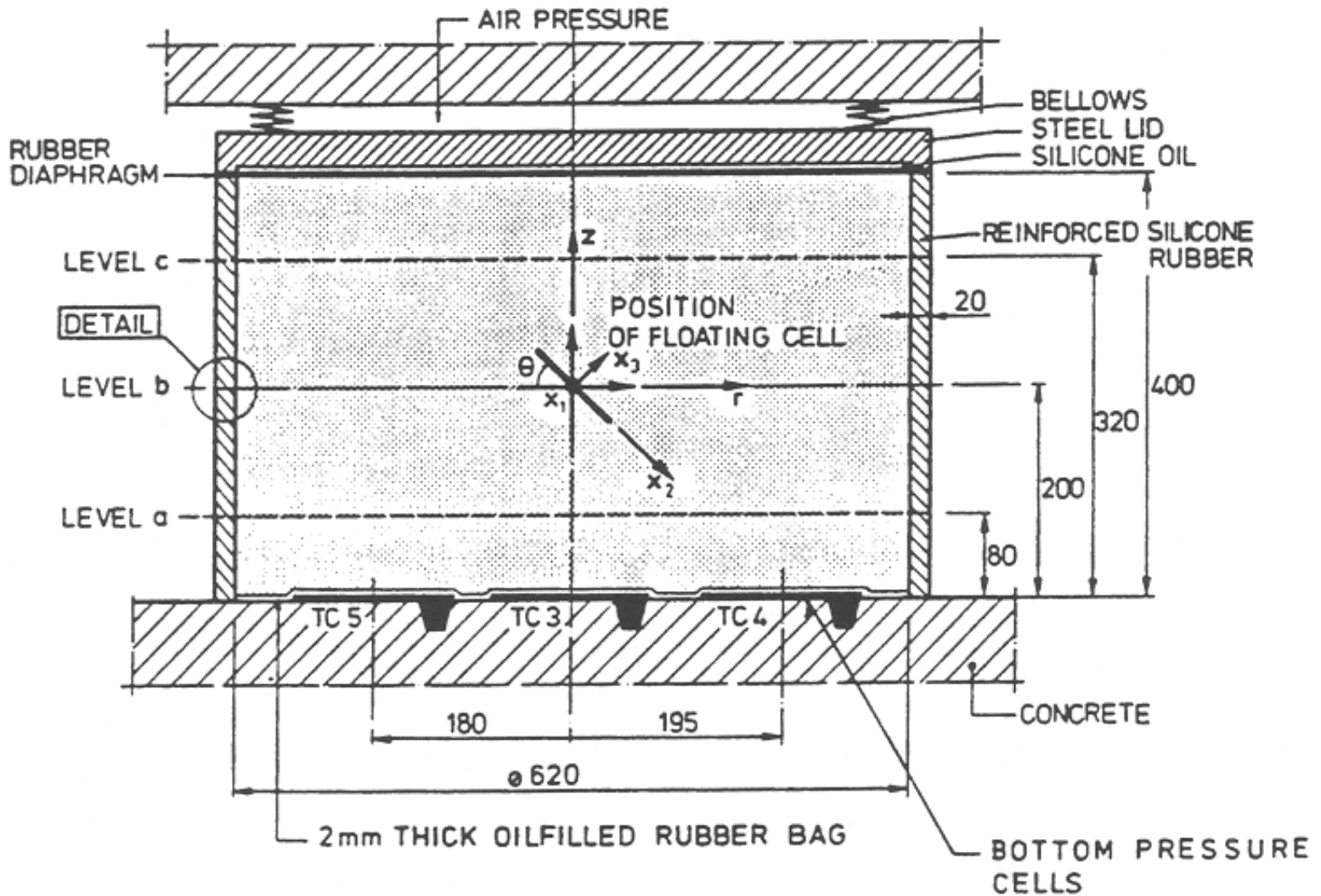


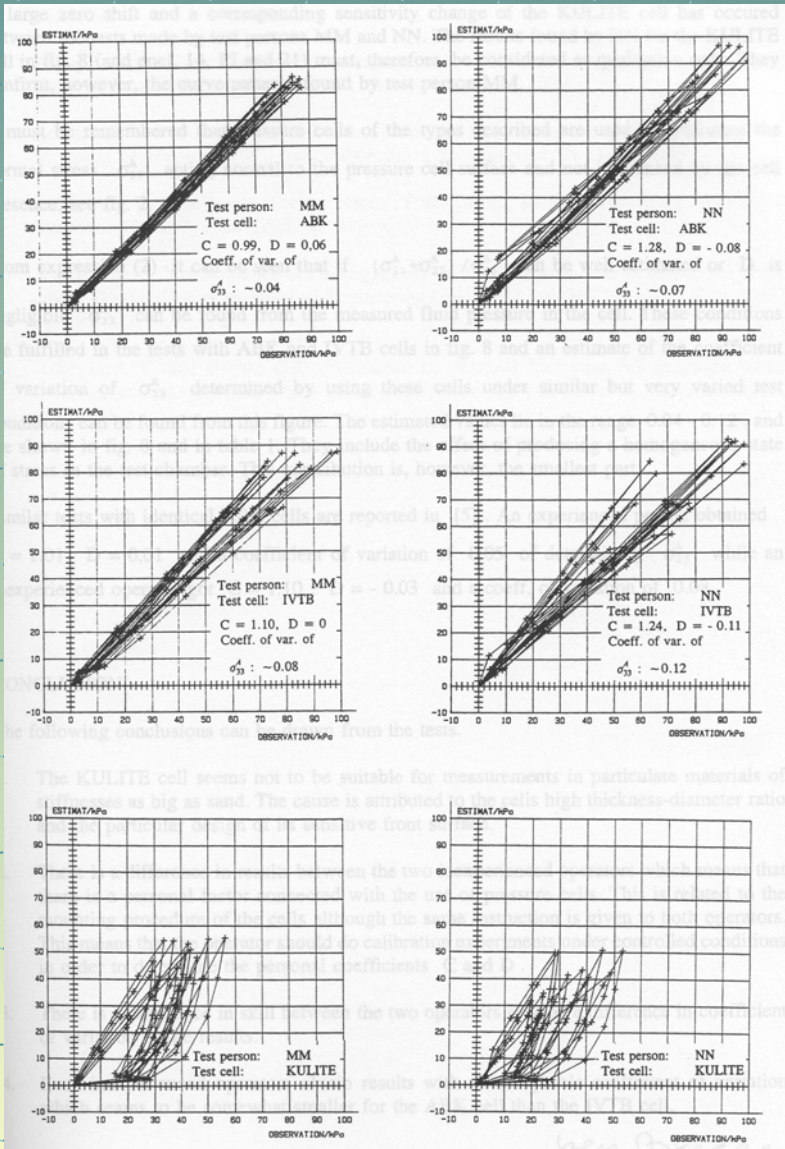


Instrumentation

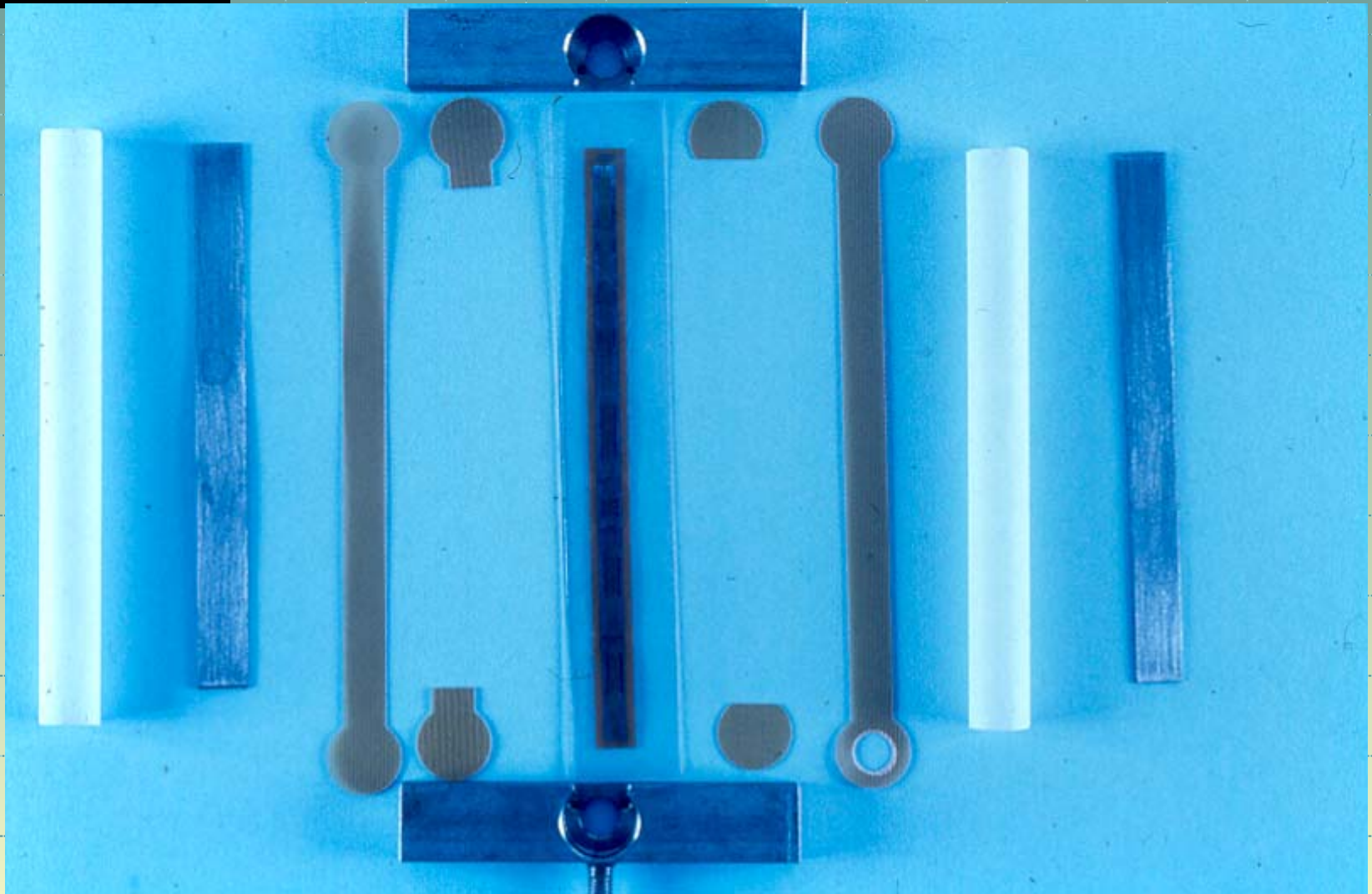
- ◆ Reliable
- ◆ Durable

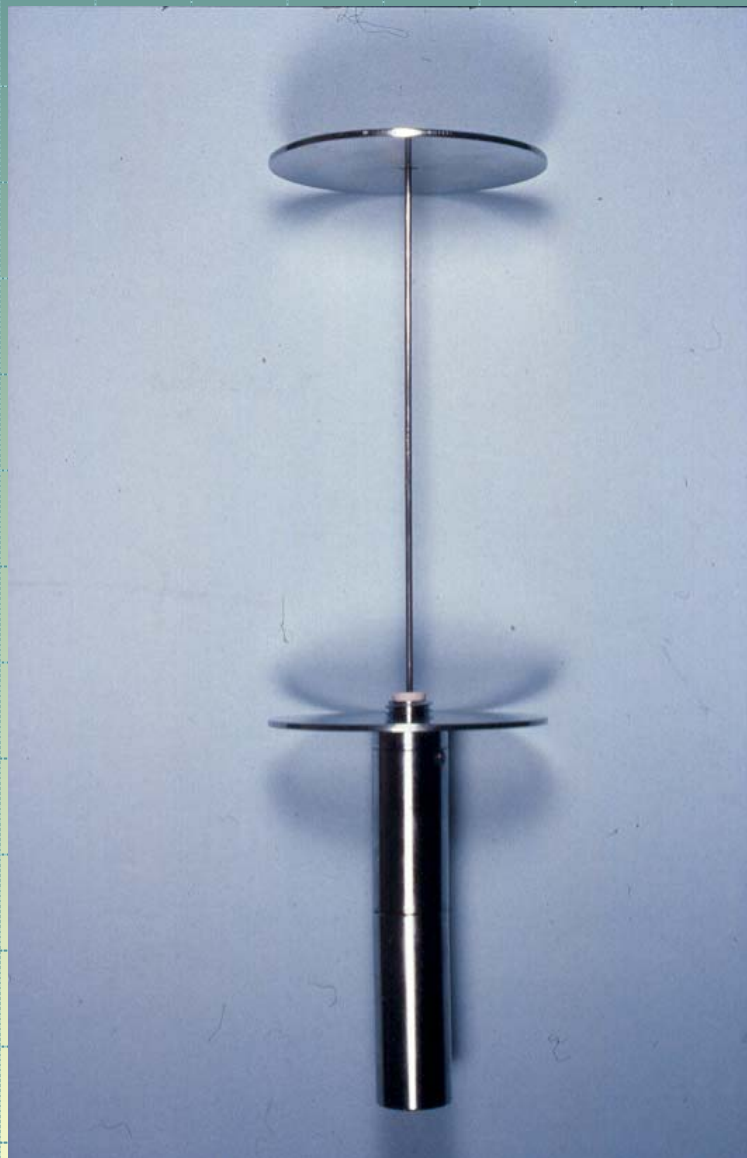


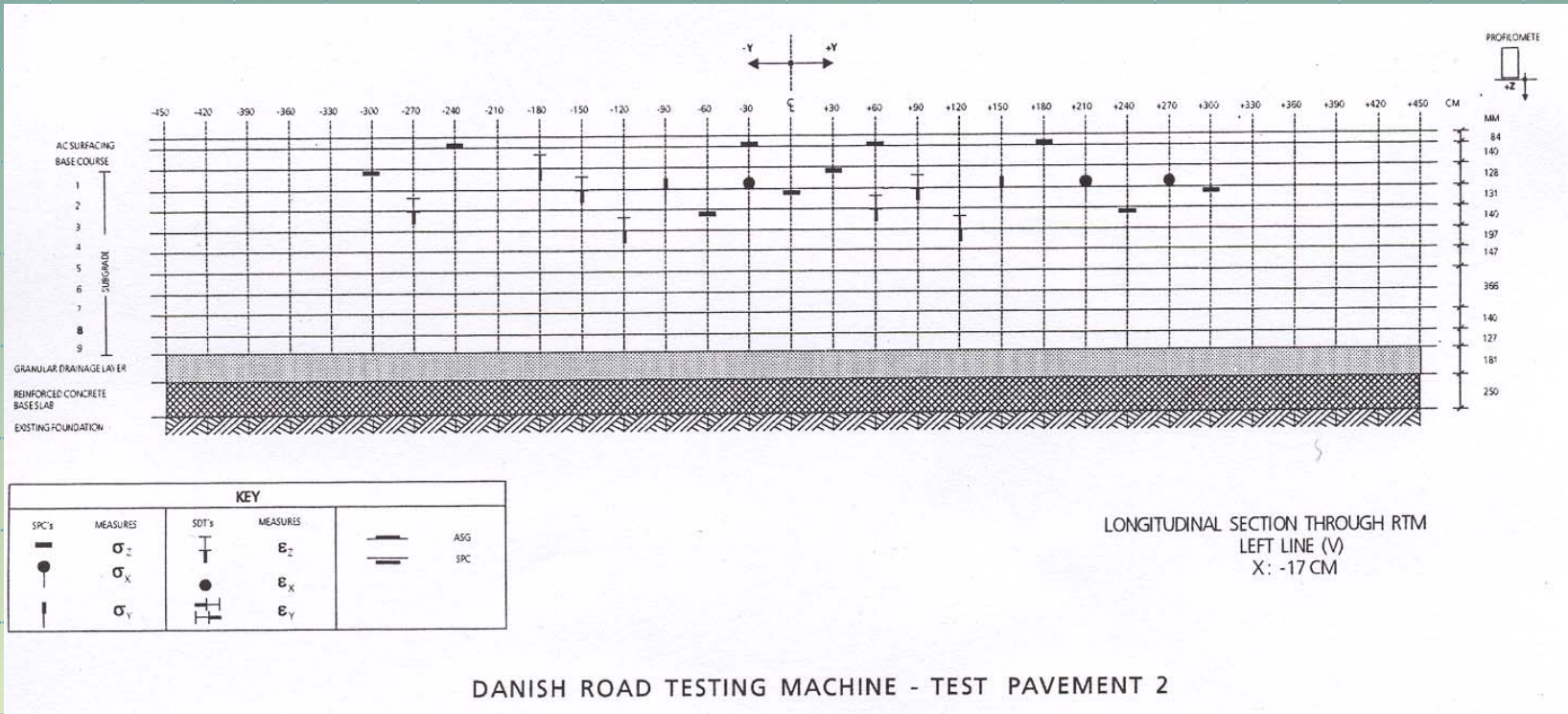




variation of σ_{nn}^A determined by using these cells under similar but very varied test conditions. The KULITE cell seems not to be suitable for measurements in particulate materials of low density as big as sand. The cause is attributed to the cells high thickness-diameter ratio. The following conclusions can be drawn from the tests:





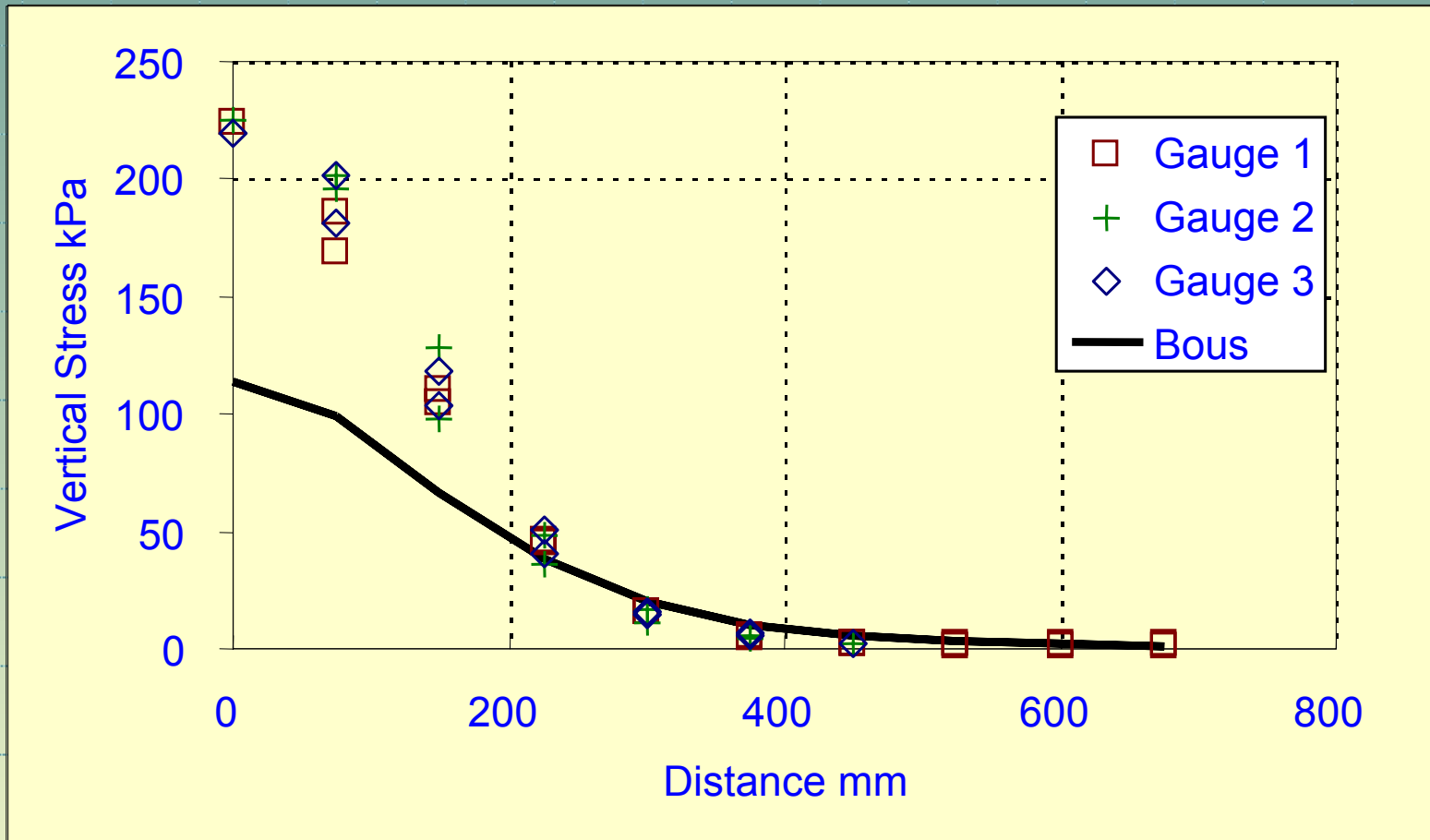


DANISH ROAD TESTING MACHINE - TEST PAVEMENT 2



Procedure

- ◆ Walk FWD over instruments (hydraulic pad)
- ◆ Measure the response (influence line)
- ◆ Calculate layer moduli
- ◆ Calculate response at position of instruments
- ◆ Compare





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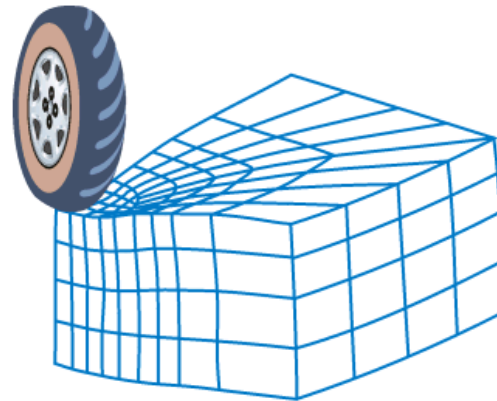
- * Objectives
- * The Partnership
- * State of the Art
- * Work Content
- * Description of the Workpackages and Tasks
- * Deliverables
- * Final Report
- Transport RTD Programme (Cordis/EU)

Comments
webmaster@lnec.pt

AMADEUS

Advanced Models for Analytical Design of European Pavement Structures

Commission of the European Countries Contract N° RO-97-SC.2137 for Community Activities in the field of Research and Technical Development



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Done

Internet



Phase 2: Verification of response

Model	Team	CEDEX				DTU			LAVOC		
		ϵ_x	ϵ_z	σ_z	d	ϵ_x	ϵ_z	σ_z	ϵ_x	ϵ_z	d
BISAR	1	↓	•	↓	↕	↓	↓	↓	↔	↓	↑
CAPA3D	1	↓	•	↓	↑	↓	↓	↓	↔	↓	↔
CIRCLY	1	↓	•	↓	↕	↓	↓	↓	↔	↓	↑
	4	↔	•	↓	↔	↓	↓	↓	↔	↓	↑
KENLAYER	2	•	•	↓	↔	•	↓	↓	•	↓	↕
	3	•	•	•	↔	•	↓	↓	•	↓	↓
	4	↔ ⁽¹⁾	•	↓	↔	↔	↓	↔	↔	↓	↔ ⁽²⁾
MICHPAVE	3	•	•	•	•	•	•	•	↔	↓	↔
NOAH	2	↕	•	↓	↔	↔	-	-	↔	↓	↑
SYSTUS	2	•	•	•	•	•	•	•	•	•	•
VEROAD	2	•	•	•	•	•	•	•	•	•	•

