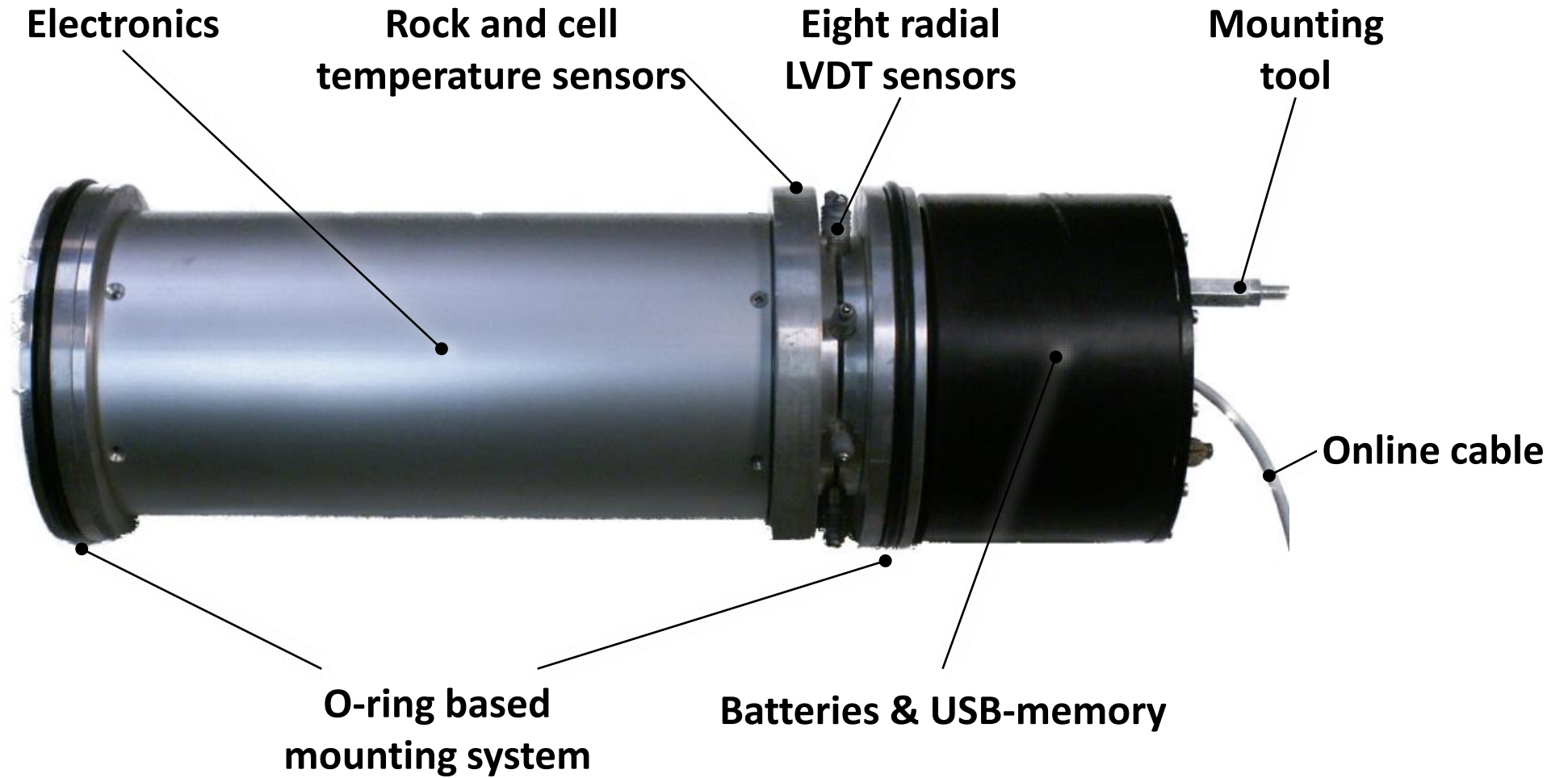


LVDT cell stress measurement method

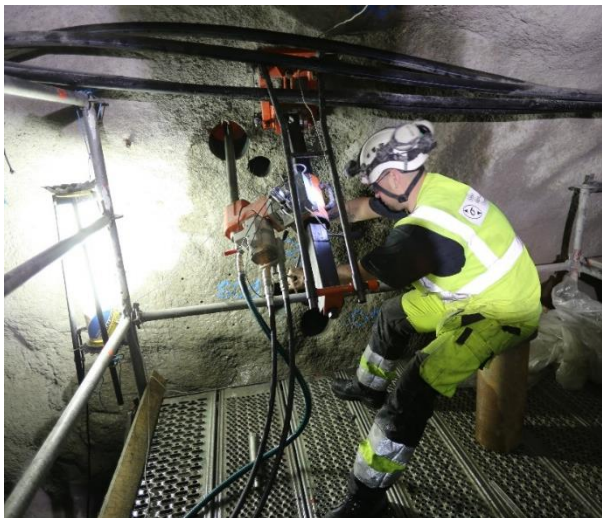


**STRESS
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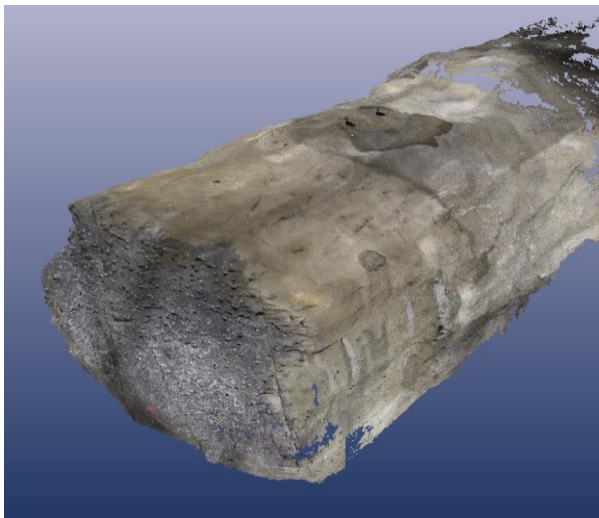
LVDT cell



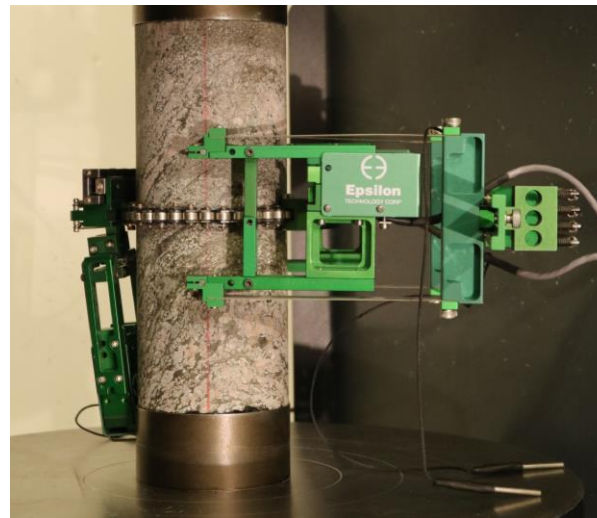
**STRESS
MEASUREMENT
COMPANY OY**



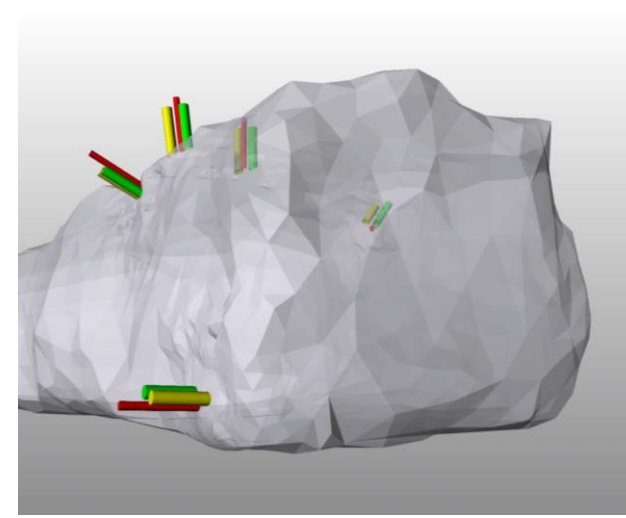
Step 1
Shallow *overcoring* or double *sidecoring* measurements



Step 2
3D Photogrammetry



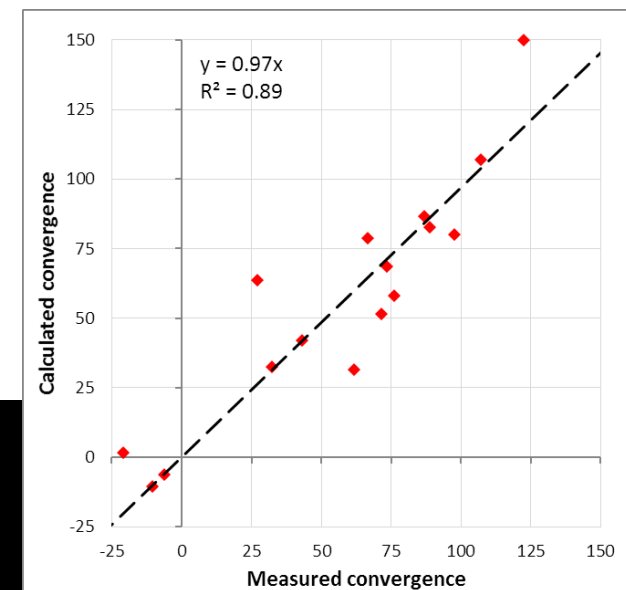
Step 3
Testing of deformability



Step 4
3D modelling to take account tunnel and hole geometry

How it works?

Step 5
Best fit inverse solution and error study



**STRESS
MEASUREMENT
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LVDT cell stress measurement method from existing tunnel or shaft results in full stress tensor

Robust

- proven to be extremely reliable even in harsh conditions

Mechanical mounting

- no glue related problems, quick installation

Large diameter pilot hole

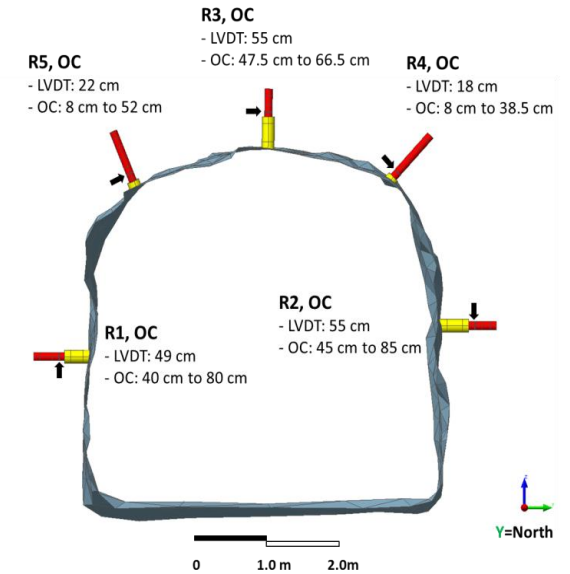
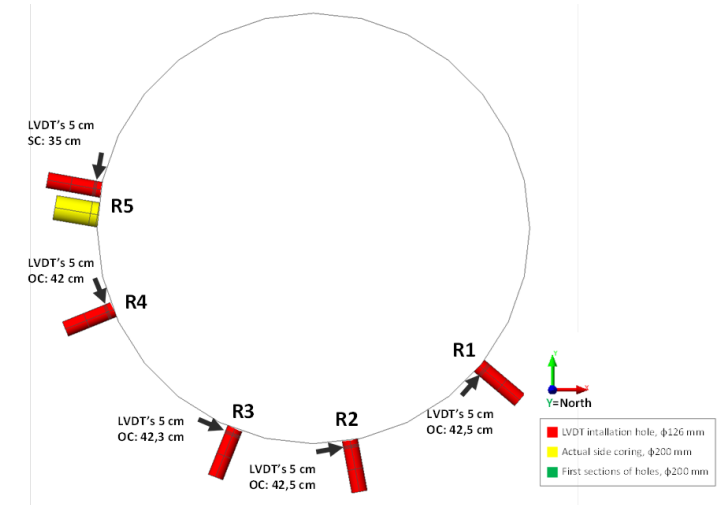
- less sensitive for heterogeneity

Compact drill rig

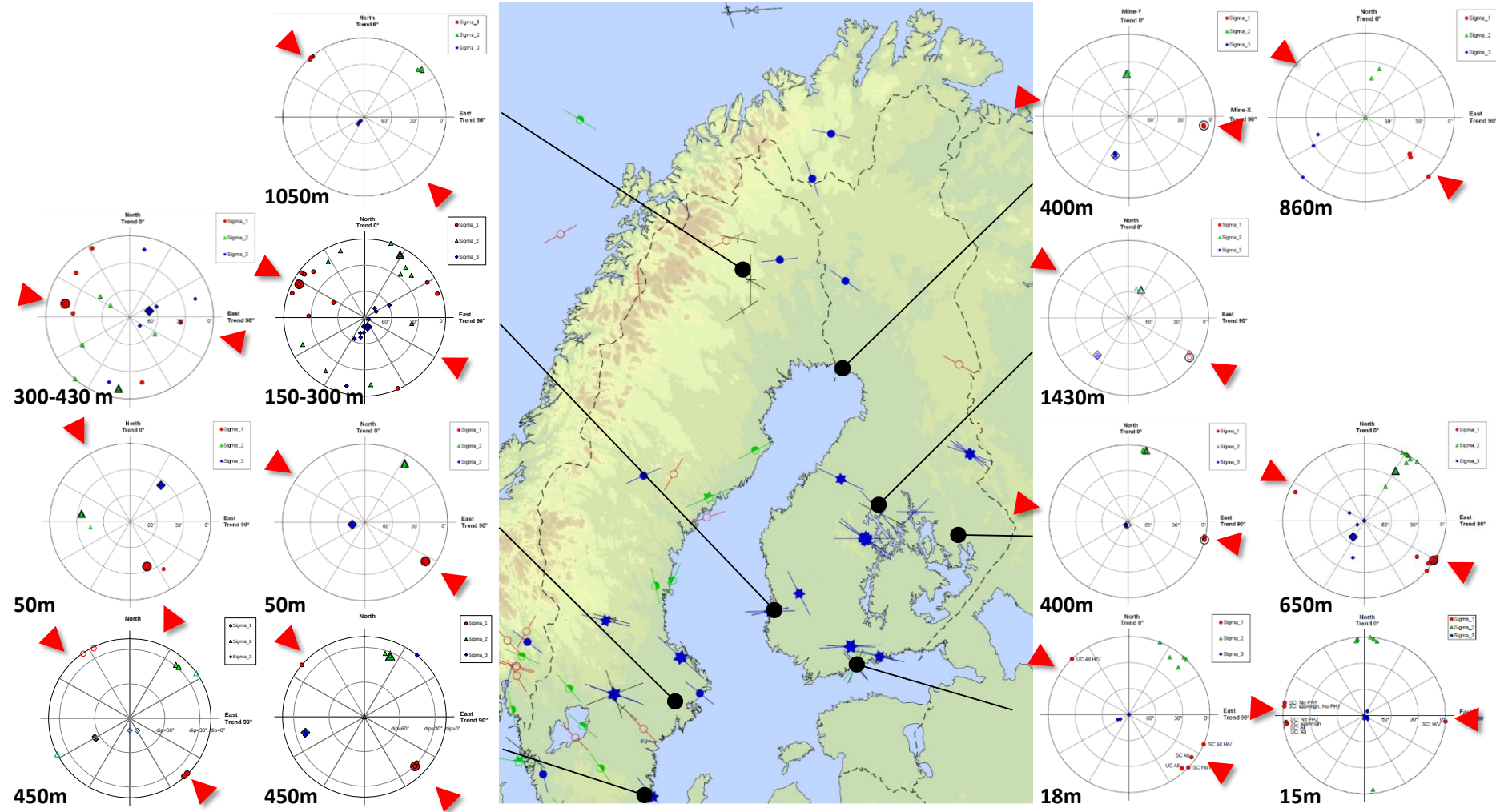
- measurement possible from limited space

Representative

- stress interpretation in tunnel scale



Maximum principal stress orientation in 2009 – 2015 measurements



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