CRACKED CLAY DIKES INVESTIGATION WITH GEOELECTRICAL TOMOGRAPHY

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Advantages of geoelectrical measurement

- Non destructive measure
- Quick separation of different soils
- Permanent profile
## Electrical resistivity of soils (ohmmeter)

<table>
<thead>
<tr>
<th>Material</th>
<th>Resistivity Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clay</td>
<td>2-30</td>
</tr>
<tr>
<td>Dispersive clay</td>
<td>&lt; 3</td>
</tr>
<tr>
<td>Silt</td>
<td>10-300</td>
</tr>
<tr>
<td>Sand</td>
<td>50-1000</td>
</tr>
<tr>
<td>Gravel</td>
<td>500-20000</td>
</tr>
<tr>
<td>Dolomite</td>
<td>100-1000</td>
</tr>
<tr>
<td>Limestone</td>
<td>100-2000</td>
</tr>
<tr>
<td>Destilled water</td>
<td>250</td>
</tr>
<tr>
<td>Salty water</td>
<td>0,0005</td>
</tr>
</tbody>
</table>
Piping phenomena

[Diagram showing piping phenomena with labels and arrows indicating water flow and soil displacement.]
Geo-electrical longitudinal profile

4200 km long
Meander crossing
Dispersive clays quick identification
Dike construction phases
The water content change in dike
Cracked clay dikes I.
Cracked clay dikes II.
Water content and resistivity in a clay dike
Water content decreasing in a clay dike
Longitudinal section of a dried out dike
Hole-hole tomography
Geoelectrical net
for longitudinal and cross measures
Identifying the drying cracked zones in a cross section
Geoelectrical net
for longitudinal measures
Identifying the cracked zones in a longitudinal section
Thank you,
for your kind attention!