

## Homogenous earth dam system

A small scale model of a homogeneous earth dam has been fitted with a drainage blanket for control of seepage through the dam body.

The reservoir filling operation of this remote experimental set-up has been recorded, as well as the subsequent injection of color fluid at two distinct locations of the upstream face of the dam for illustrating the progress of two flow lines as seepage develops through the body of the dam.

Based in the recorded images, an augmented reality (AR) application has been developed aiming to provide anyone, anywhere, with information on this experiment. The user only needs to print the AR marker and then follow the "how to use" instructions available on the web page, using any android equipment.

With this AR tool, it is possible to follow the various actions as they unfold, namely:

- The reservoir water filling operation of the earth dam small scale model;
- The injection of color fluid after completion of the reservoir filling;
- The progressive development of two flow lines (red and green), at different individual rates;
- The non-simultaneous arrival of each flow line to the drainage blanket;
- The integration of the corresponding finite element simulation results (computed for this set-up and configuration) to illustrate the flow line layout.

With the image sequence some questions are also embedded, with the purpose of making the users aware of some physical aspects.