



Second Laureate Invention

- ◆ **Project Title:** Inverted Pendulum Inclinator (IPI)
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Abstract:

One of the most precise instruments for concrete dams horizontal movements measurement are pendulums. Direct pendulums are pendulums inside the dam body, which, very precisely, reflects horizontal position of its hanging point to different points where the pendulum wire is accessible. Indirect pendulums have inverted suspension on the top via floater and its wire transfers situation of fix point at the bottom of a borehole to the surface (ground). But since there is no access to the wire along the borehole depth, movements can only be measured at one point at the top of the borehole.

Statistics indicate that failure of more than 80% of concrete dams have started from foundation. Therefore, accurate measurement of foundation deformation at different depths is of vital importance for ensuring stability and decision making for remedial actions.

Inverted pendulum inclinometer is an innovation that gives such a vital chance to precisely measure foundation movements at any depth and draw a clear picture of foundation behavior.