GIREP-EPEC
Transforming physics learning via Research & Practice
LEIDEN, 2025

Contribution ID: **238** Type: **Poster**

AC current through an open circuit: Demonstrating the role of a capacitor as a reservoir of charge

Monday 30 June 2025 16:30 (1 hour)

We measure current in an open AC circuit generated by connecting capacitors which act as charge sinks to the open end of the circuit. In the infinite capacitance limit, the current is the same as for a closed circuit. This demystifies the concept of Earth" or ground in a circuit. A neon lamp is used to measure these small currents non-invassively. The setup can be used to demonstrate the current in open circuits, the concept ofEarth" in circuits, and to measure very small capacitances associated with single conductors. This experiment is appropriate for an undergraduate physics laboratory.

Education level

Age over 18 (excluding teacher education)

Physics topic

Contemporary and modern physics

Research focus

Lab experiments

Research method

Innovative research strategies (Try-out) (Qualitative research)

Organizing preference criteria

Track

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Presenter: ARVIND, Arvind

Session Classification: Poster session

Track Classification: Laboratory-based physics (LAB)