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Scientists of tomorrow – Geophysics School Lab for Secondary School Students

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Starting in 2012, the Geophysical Institute (GPI) at Karlsruhe Institute of Technology (KIT) developed several geophysical experiments for secondary school students which are now part of the Geophysics School Lab at the GPI. Usually, the students visit the School Lab as a class together with their teacher (Physics, Geography, Science), but the School Lab can also be used for extracurricular learning of individual students.

The experiments carried out deal with the topics Seismology, Geoelectrics, and Fluid Dynamics: A horizontal seismometer is decoupled from its registration unit for the time of the visit of the students. With this setup, the students can measure the natural period of the pendulum, and adjust the seismometer accordingly. At different experimental stations, students can analyse seismic data registered with this unit, locate earthquakes, or get to know and understand an accelerometer. The accelerometer is attached to a registration unit and data can be visualized in real time. In another experimental setup, the students can measure the viscosity of a fluid as a function of temperature in order to get a better understanding of different magma types and their viscosity. Furthermore, a geoelectric experiment is carried out in a sandbox: The students experience with non-destructive testing, and try to reveal the subsurface structure.

For our experiments, secondary school teachers can receive free supportive materials for the preparation of the visit.

The aim of the Geophysics School Lab is to encourage and acquaint secondary school students to the concepts of Geophysics, and to enthuse them with the applied issues of Geosciences.