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# Swiss Atlas of PHYsical properties of Rocks (SAPHYR)

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The Swiss Atlas of PHYsical properties of Rocks (SAPHYR), is a multi-year project, funded entirely by Swiss Commission for Geophysics (SGPK), with the aim to compile a comprehensive data set in digital form on physical properties of rocks exposed in Switzerland and surrounding regions. The ultimate goal of SAPHYR is to make these data accessible to an open and wide public including industrial, engineering, land and resource planning companies, as well as academic institutions, or simply people interested in geology.
Since the early sixties worldwide many scientists, i.e. geophysicists, petrologists, and engineers, focused their work on laboratory measurements of rocks physical properties, and their relations with microstructures, mineralogical compositions and other rock parameters, in the effort to constrain the geological interpretation of geophysical surveys. Particularly in the years in which seismic reflection and refraction crustal scale projects were investigating the deep structures of the Alps, laboratories capable to reproduce the pressure and temperature ranges of the continental crust were collecting measurements of various rock parameters on a wide variety of lithologies, developing in the meantime more and more sophisticated experimental methodologies. In recent years, the increasing interest of European Countries on non-traditional energy supply, (i.e. Deep Geothermal Energy and shale gas) and $CO_2$ storage renovated the interests in physical characterization of the deep underground.
SAPHYR aims to organize all those laboratory data into a geographically referenced database (GIS). The data refer to density, porosity, permeability, and seismic, magnetic, thermal and electric properties. In the past years, effort has been placed on collecting samples and measuring the physical properties of lithologies that were poorly documented in literature. The phase of laboratory measurements is still in progress. Recently, SAPHYR project focused towards developing a 3-D physical properties model of the Swiss subsurface, using the structure of the exposed geology and data from boreholes and seismic surveys, combined with empirically determined pressure and temperature derivatives. The product is now almost ready for publication and an early version is presented here.