

The construction of a Rock-Physics Module

When I loaded my course descriptions in Geo-GPT and asked which topics were missing, I received the reply that I could add a Rock-Physics and a Near-Surface module. I agreed and started with designing a new course on Rock-Physics. The first task was to build an interactive Jupyter notebook for designing a Differential Effective Medium (DEM). In DEM we start with an effective background medium and successively add different kinds of porosities. The module allows the calculation of elastic parameters for a medium with different proportions of interparticle, crack and vugs porosity. For clastic reservoirs interparticle and aligned cracks describes an anisotropic medium quite well, but for carbonates vugs, solution cavities, need to be added. Other properties could eventually also be added.

The DEM module will also be added to my “Quantitative Reservoir Characterization (QRC)”, “Amplitude versus Offset (AVO)” and “Advanced Seismic Interpretation using AI (ASIAI)” courses.