



Scientific Deep Drilling – The Heidelberg Basin Project

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1. The Heidelberg basin is the major subsidence area of the Northern “Upper Rhine Graben” (URG). As the major sediment trap along the Rhine System between the Alps and the North Sea, it comprises
 - an exceptionally complete mid-continental sediment archive of the early and mid-Quaternary,
 - an ideal “half way between” locality to correlate alpine and North European glacial-interglacial patterns,
 - a sedimentary measuring device of the neo-tectonical evolution North of the Alps.
2. Regarding all main sediment accommodation areas along the Rhine, we find the proximal lithofacies in the Overdeepened Valleys and glacial basins at the Alpine Margin and in the Southern URG, and the distal lithofacies in the Northern URG, Lower Rhine and North Sea. The Heidelberg basin fill is the most proximal of the distal group. Using sequence stratigraphy as a correlation tool to drillsites of the other land systems, we obtain a more complete archive regarding both the stratigraphical and the geodynamical evolution.
3. Within the Heidelberg basin, three sites for scientific drillings were chosen to represent different lithofacies successions:

- at the Eastern Margin (Ludwigshafen Parkinsel) a still discontinuous succession
 - in the centre (Viernheim) the most complete Rhine dominated succession
 - and in the subsidence centre (Heidelberg Uni-Nord) the thickest succession but with strong influence of the Neckar (major tributary of the Rhine).
4. First results from all three sites will be presented, ranging from sedimentology and sediment petrography and provenance studies, bio-stratigraphy, palaeomagnetism and other dating techniques, to various borehole geophysics, seismics and 3D modelling of the Heidelberg basin and surrounding highlands. This includes scenarios on the Climate versus Tectonics Control of the geodynamical evolution. The Project is still enthusiastically ongoing.