

# Scientific Deep Drilling – The Heidelberg Basin Project



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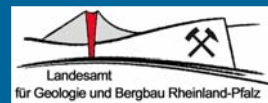
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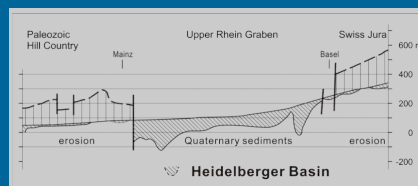


## Introduction

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.

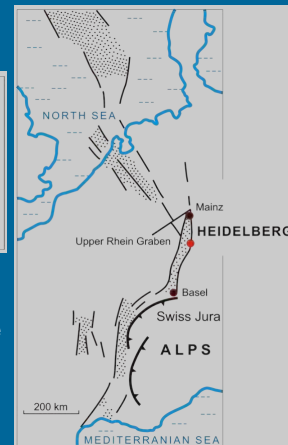
**500 m** of soft rocks are expected in the Heidelberg drilling.

At the moment the deepest samples are from 190 m below surface (- 83 m below sea level).

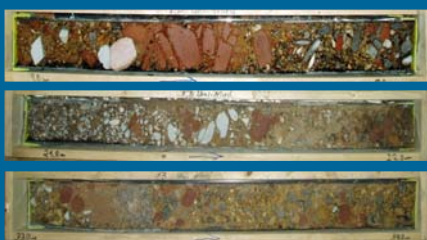


The Upper Rhein Graben is part of a trench system between the Alps and the Northern Sea. The most complete section of Quaternary sediments is expected in the Heidelberg Basin.

(Fig. after R.PFLUG, 1982: Bau und Entwicklung des Oberrheingrabens, S 40, S 70)



## Examples of samples



9-10 m: gravel, cobble & blocs

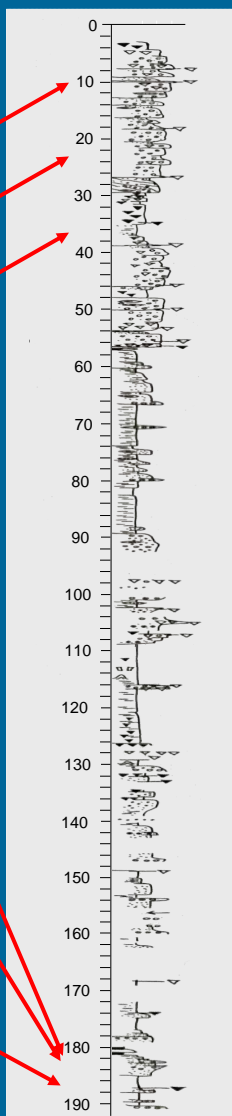
21-22 m: gravel, sand & cobble

33-34 m: diamicton

180-182 m: peat

183-184 m: gravel & sand

185-187 m: laminated fine sediment



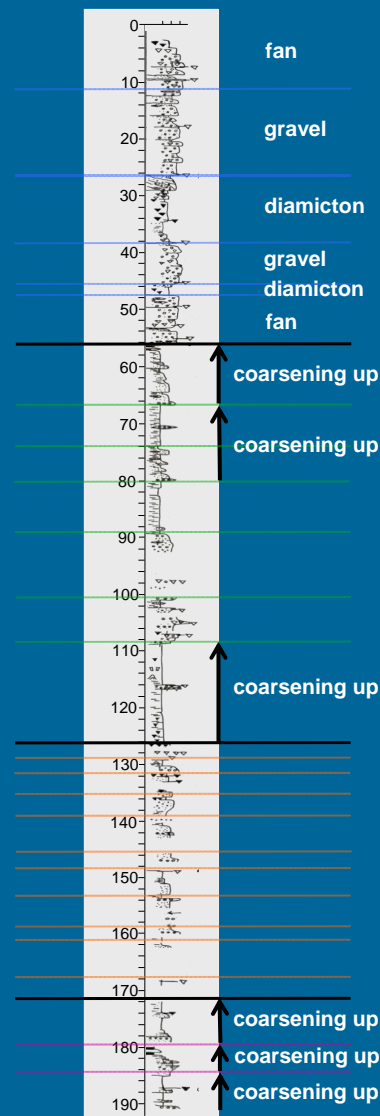
## Sedimentological interpretation

Part 1: Variations of local subsidence in the Heidelberg Basin and uplift of the source area results in 6 sediment cycles with varying grain size. Diamictons = strong subsidence, Gravels = medium subsidence and fan = low subsidence.

Part 2: Subsidence in the Heidelberg Basin and in the source area results in 7 sediment cycles. At least 3 of these cycles are coarsening up cycles.

Part 3: Strong topographic differences but low subsidence in the Heidelberg Basin results in 11 sediment cycles.

Part 4: Strong topographic differences combined with strong subsidence in the Heidelberg Basin results in 3 distinct coarsening up cycles.



## Conclusion

First results are now available, ranging from the here presented sedimentology to sediment petrography, 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.