New methods to reconstruct Holocene compaction and to determine its effects on alluvial architecture

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Abstract

Compaction due to the weight of overlying deposits of unconsolidated sediments in flood basins leads to changes in cross- and down valley gradients, local sedimentation rates and natural levee heights. These changes may initiate *avulsion*, which is a major control on *alluvial architecture*. Therefore, *peat compaction* might be an important factor controlling alluvial architecture. Three methods to determine the influence of peat compaction on river behaviour are proposed. Fieldwork will be carried out in the Rhine-Meuse delta (The Netherlands) and in the Cumberland marshes (Canada). Furthermore, a compaction model will be developed and incorporated in a 4D (time-space) alluvial architecture computer simulation model to determine the effect of peat compaction on alluvial architecture.





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Background: high resolution DEM (AHN, RWS-AGI) of western Netherlands.