

Recent advances in the numerical modelling of embankment dams

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SYNOPSIS. The main concern when designing or analysing embankment dams is usually their stability. However, assessing their deformation is also important. This paper describes the recent use of advanced numerical analysis to predict the latter. Examples of its use in assessing likely movements of six embankment dams constructed in the UK are provided. Various phases in dam life are considered: embankment construction, first reservoir impounding, subsequent reservoir operation and raising the crest level. The use of adequate constitutive laws and, in particular, the importance of modelling the plastic behaviour of embankment fills during loading, unloading and re-loading is clearly demonstrated.