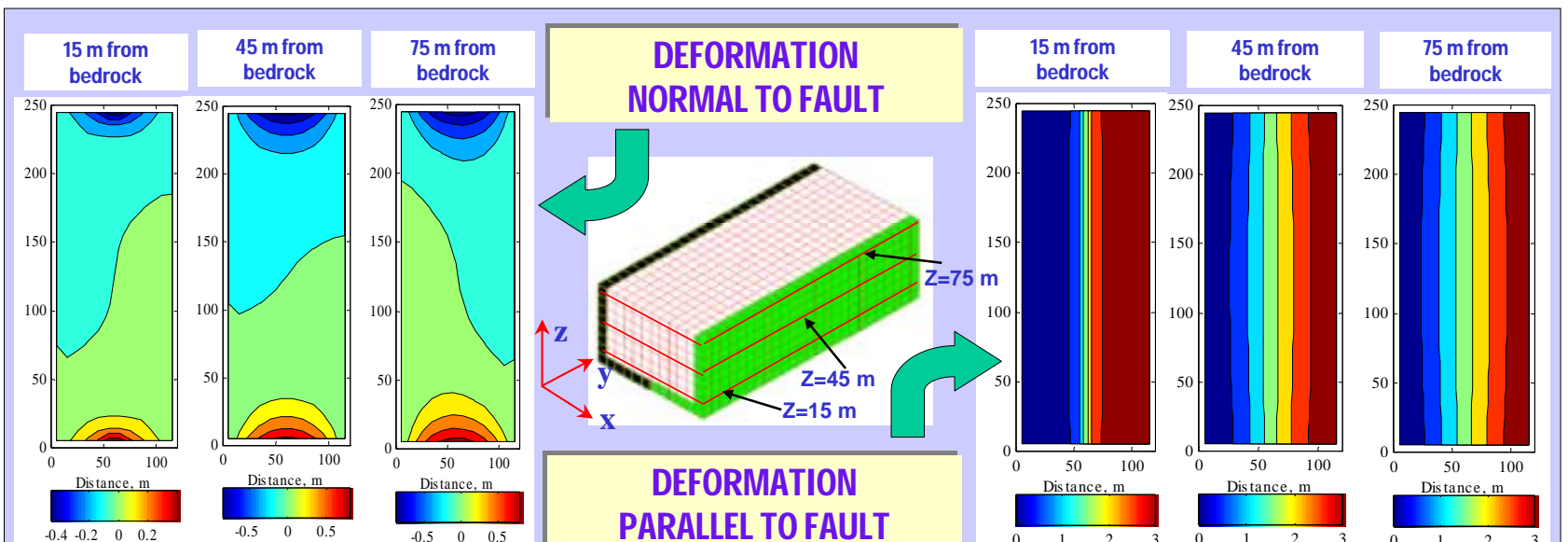
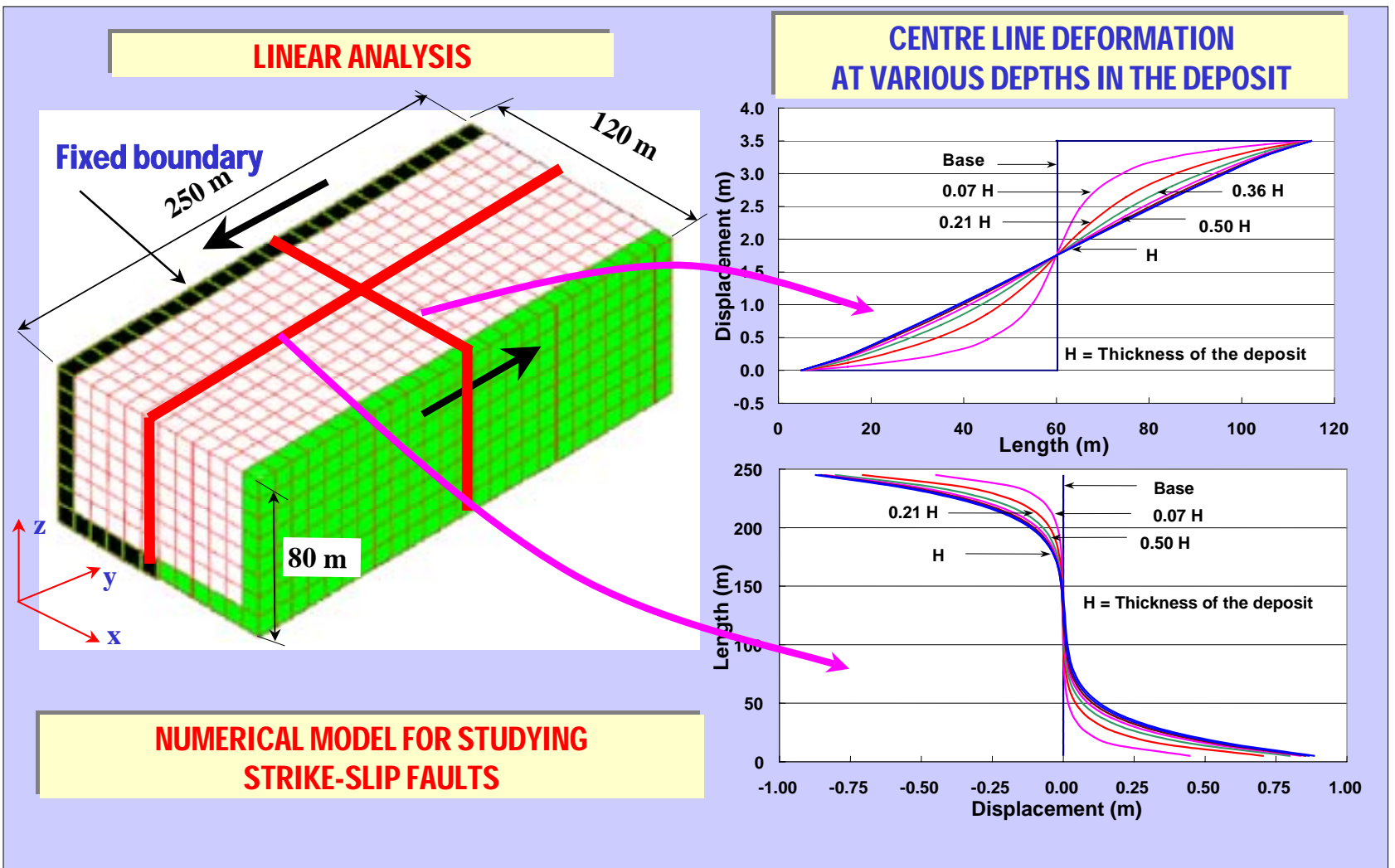
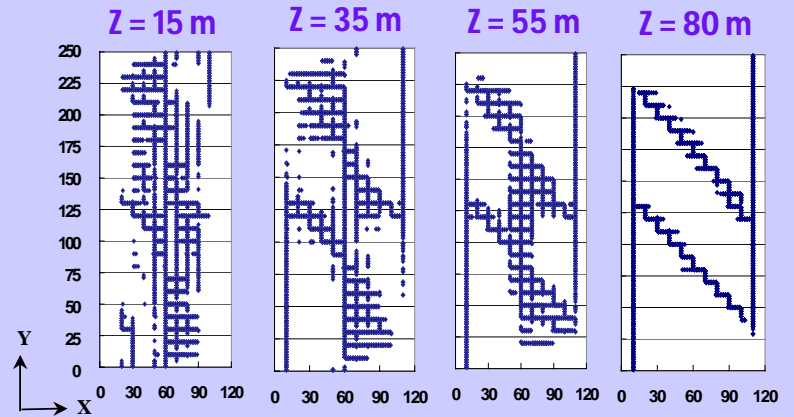
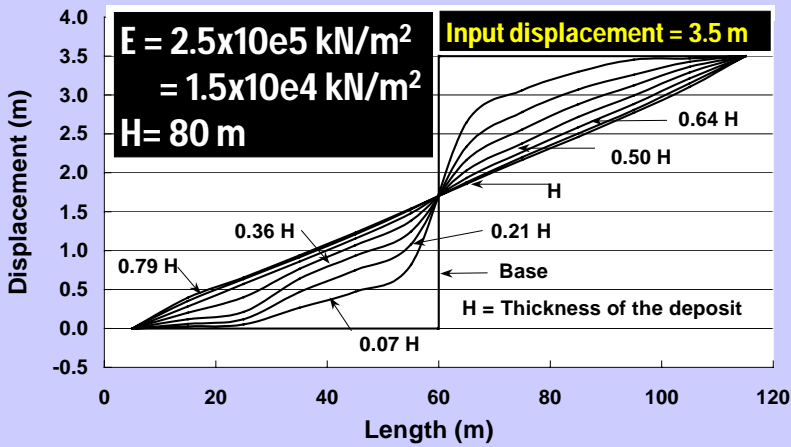


When an active bedrock fault ruptures, the movement along the fault propagates through the overlying soil and produces zones of intense shear. Hence, it is important to study the surface behavior based on the fault characteristics. For this reason, we attempted to develop a new application to Applied Element Method (AEM) by modelling the fault rupture zone. In this, we model the fault rupture problem in three dimensions. First, a simple model is used to illustrate the absorption of the bedrock deformation by the overlying soil in elastic case. The results are compared with the analytical and numerical models wherever applicable. In the later part, the non-linear analysis is carried out to study the complex failure propagation in three dimensions. Influence of mechanical properties of the material is also discussed.

断層挙動の3次元的影響を見るために、3次元AEMを用いた解析を行っている。解析精度をまず理論値と比較する。次に非線形解析を行い、横ずれ変位を作用させた場合に発生する表層地盤内部と地表に発生するクラックの分布や応力状態を分析する。すなわち、表層地盤の厚さや材料特性変化させた場合のエシュロンクラックの発生する間隔やエリアの変化などについて検討する。

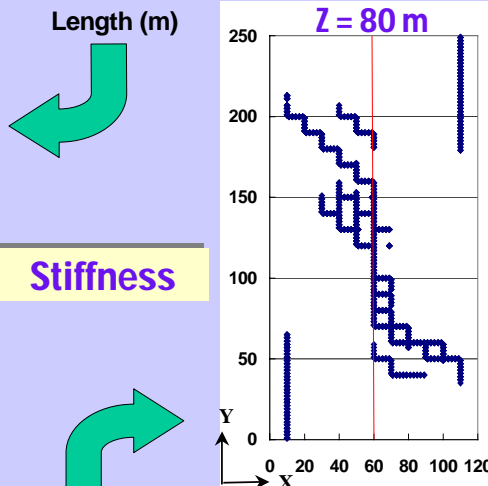
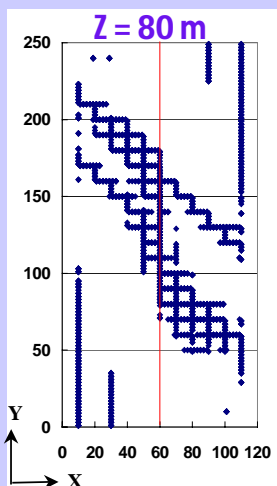
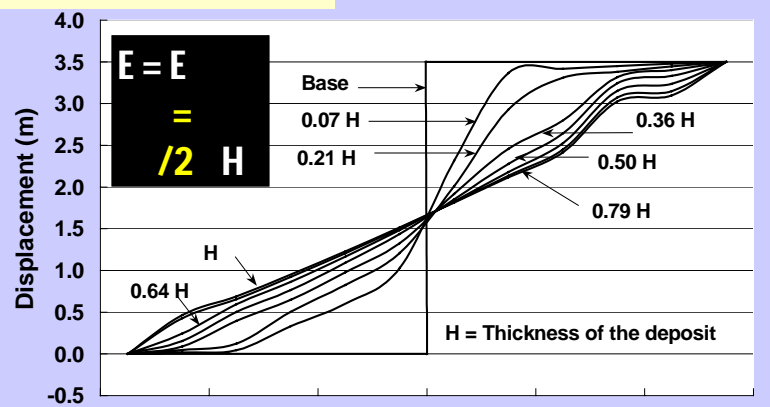
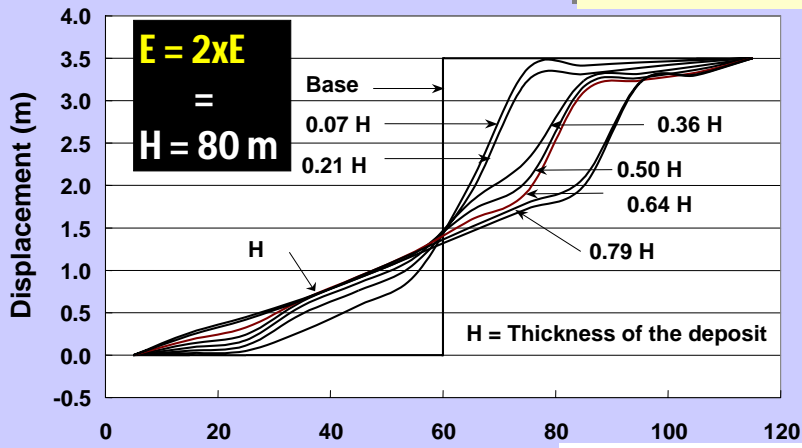


NON-LINEAR ANALYSIS

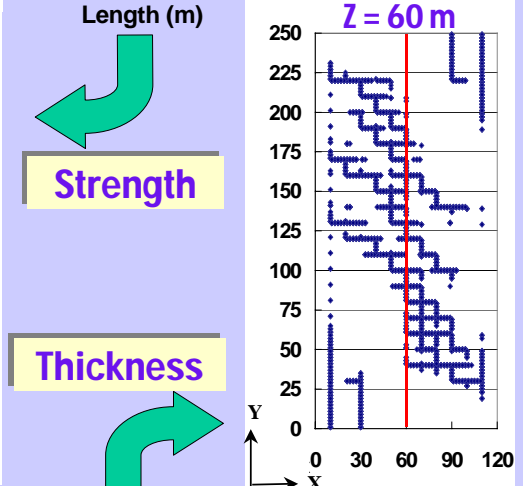
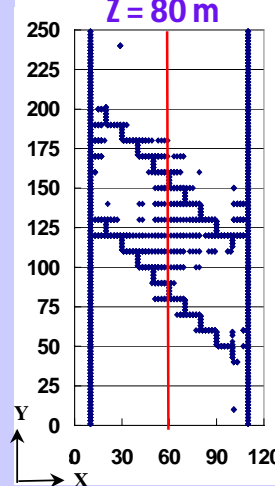


Evolution of cracks

PARAMETRIC STUDY



Stiffness



Strength

Thickness

