



## **Overview of the recommended procedures dealing with the evaluation of liquefaction-induced deformation along a pipeline corridor**

George Papathanassiou

Aristotle University of Thessaloniki, Geology, Greece (gpapatha@auth.gr)

The last decade several pipeline corridors have been designed in order to transmit to Europe natural gas and oil from Asia. Although the fact that a pipeline is considered as an underground structure, an analysis of earthquake-induced structural failures should be conducted in prone to earthquake countries e.g. Greece, Italy in EU. The aim of these specific analyses is to assess and evaluate the hazard and the relevant risk induced by earthquake-induced slope failures and soil liquefaction. The latter is a phenomenon that is triggered under specific site conditions. In particular the basic ingredients for the occurrence of liquefaction is the surficial water table, the existence of non-plastic or low plasticity soil layer and the generation of strong ground motion. Regarding the liquefaction-induced deformation that should be assessed and evaluated in order to minimize the risk, it is concluded that the pervasive types of ground failures for level to gently sloping sites are the ground settlements and lateral spreads. The goal of this study is to overview the most widely approaches used for the computation of liquefaction-induced settlement and to present a more detailed description, step by step, of the methodology that is recommended to follow for the evaluation of lateral spreading.