

**The rift valley and its engineering effects deserve attention
-Comments on the presentation of Prof. Peng Jianbing-**

Few days ago, an article on ground fissures in the Great Rift Valley has been presented on our Website by the Chinese colleague Prof. Peng Jianbing. The presentation told a very interesting story that from March to May in 2018 several ground fissures suddenly appeared in the Kenya section of the Great Rift Valley. These unexpected ground fissures posed threats to the safety of local people and also to the construction of Mombasa-Nairobi Railway. To reduce these potential threats, it is important to scientifically understand whether these ground fissures are the manifestation of the tensile fracture of the Great Rift Valley or the response to the deep tectonic activity. Prof. Peng and his team have conducted special researches on the ground fissures in the Great Rift Valley. They could observe from field tests that some upper mantle materials in gas form escape from the ground fissures. This indicates that these ground fissures connect with deep active faults and are related to deep tectonic thermal activities. They also carried out series of in-situ large-scale scientific trenching and drilling tests. It was found that there are many Holocene active faults and intensive tensile zones in the bedrock beneath the loose volcanic ash in the rift zone, which form the hidden fracture system and lay the foundation for the prototype of ground fissures. It was concluded that the involved ground fissures were induced by soil erosion and collapse due to heavy rainfall along these hidden fissures. Prof. Peng's interpretation and discussion on the formation of ground fissures in the Great Rift Valley not only discloses the mechanisms and thus the mystery on the formation of these ground fissures in the international scientific community, but also is helpful to relief the safety risk in the

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construction of the Mombasa-Nairobi Railway. This shows that engineering geologists can recognize natural disasters and play an important role in the civil construction and urban development.



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08.03.2019