



**Institut für Geotechnik**

Boden- und Felsmechanik,  
Erd- und Grundbau, Felsbau,  
Spezialtiefbau, Tunnelbau,  
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# Geotechnik-Seminar

**Montag, 11. Juni 2012, 16:00 Uhr**

Universität Stuttgart, Universitätsbereich Vaihingen  
Pfaffenwaldring 7, Hörsaal V 7.03

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## Neueste Entwicklungen im maschinellen Tunnelvortrieb

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Two trends have become discernible in the development of mechanized tunnelling technology in recent years: firstly demands on the engineering technology have risen significantly and secondly ever more complex challenges have to be mastered regarding the technical and logistical aspects of projects. Essentially the feasibility of mechanized tunnelling is not just affected by the subsoil conditions but also by the lengths of tunnelling, the demand for larger profiles and the prevailing hydrostatic pressures. Surface requirements (densely built-up inner-city areas, restricted working space at the access and target shafts) determine the design of tunnelling installations for an increasing number of projects and pose challenges for the construction site logistics. The future-oriented infrastructure projects call for mature engineering technology that is adapted to growing demands.

Thus Mixshields both in their classical operating mode as a shield with liquid-supported tunnel face as well as a shield with dual mode operation are being used more frequently for complex subsurface conditions. This type of machine has turned out to be a multi-purpose solution for projects posing high demands by dint of its engineering concept. At the same time the range of application of EBP-Shields has been extended by the introduction of foam conditioning which has gained in popularity following successful projects in Europe, Asia and Far East. At present EPB Shields are also being used for heterogeneous subsoil conditions. In hard rock the developments in mechanized tunnelling has been aimed at handling more and more demanding rock massifs of high abrasiveness, high rock strength and the mastering of blocky and squeezing rock conditions.