



Vortrag im Gästeprogramm des GRK 2075

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Sustainable Structures Enabled by Fiber-Reinforced Polymer Composites

Freitag, 01.07.2016, 11.00 Uhr

Institut für Statik, Seminarraum im Erdgeschoss
Beethovenstraße 51, 38106 Braunschweig

Fibre-reinforced polymer (FRP) composites are formed by embedding continuous fibres (e.g. carbon, glass and aramid fibres) in a polymeric resin matrix. The advantages of FRP composites include their excellent corrosion resistance, high strength-to-weight ratio and tailorability of material properties. In recent years, FRP composites have gained increasingly wide acceptance as a new class of construction materials that has a significant role to play in enhancing the sustainability of civil engineering structures.

This presentation will cover the following aspects: (a) a review of recent advances in research into the behaviour and modelling of concrete structures strengthened with FRP composites, with particular attention to the accurate numerical modelling of debonding failures and FRP-confined concrete columns; (b) innovative hybrid structural members based on the optimal combination of FRP with other materials, particularly high-performance materials such as high-strength steel and high strength concrete; (c) sustainable coastal/marine structures made of FRP and sea-sand seawater concrete (SSC), in which sea-sand and seawater are directly used to make concrete as steel corrosion is no longer a concern. In addition, a brief introduction to the Research Institute for Sustainable Urban Development (RISUD) will be given. RISUD was established by The Hong Kong Polytechnic University as a university-wide research institute for multi-disciplinary research to support the sustainable development of high-density cities. Research on sustainable materials and structures forms an important part of the research activities of RISUD.

Kontakt

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