

平成 21 年 5 月 19 日

応用物理学会北海道支部  
会員各位

応用物理学会北海道支部

### 講演会のお知らせ

下記講演会を開催いたしますので、多数ご参加下さいますようお願い申し上げます。

演題：Fuzzy-logic-based Material Modeling of Hardening Concrete

講師：Petr Stemberk 氏

( Czech Technical University, Czech Republic )

日時：平成 21 年 6 月 3 日（水） 16:30～17:30

場所：北海道大学工学部物理工学系大会議室（A-1-17）（予定）

主催：応用物理学会北海道支部

### 講演の要旨

Analyses of mechanical behavior of hardening concrete require a material model which can be used at any age of the hardening concrete. That means the material model needs to take into account the rapidly progressing hydration, which is manifested by the rapidly developing strength and stiffness. The objective of this study was to develop a material model mainly for analysis of short-time and also for time-dependent mechanical response of hardening concrete, which can best utilize the available experimental data and expertise of experienced researchers and engineers on behavior of hardening concrete. The proposed material model is based on fuzzy logic. For the analyses of hardening concrete under short-time loading, stress-strain curves defined by the fuzzy rules, which are based on measured data and experience, are used. The presentation shows various types of fuzzy decision-making and their effect on applicability of the material model in numerical analyses. The material model for creep of hardening concrete, which is based on fuzzy logic, is also presented.

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