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zve všechny zájemce
na přednášku

Variational tools in analysis of multifunctions

kterou prosloví

doc. Ing. Jiří Outrata, DrSc.

Ústav teorie informace a automatizace AV ČR
v Praze

ve středu 7. prosince 2016
v 10:30 hod.
ve velké posluchárně
Matematického ústavu AV ČR,
Žitná 25, Praha 1.

Jde o třináctou přednášku konanou
v rámci cyklu reprezentačních přednášek
organizovaných na počest

prof. Eduarda Čecha,

jednoho z nejvýznamnějších českých
matematiků novodobé historie
a zakladatele
Matematického ústavu AV ČR.

Jiří Rákosník, ředitel

Variational tools in analysis of multifunctions

Local analysis of various types of Lipschitzian stability of multifunctions is one of the central topics in modern variational analysis. The obtained results have numerous applications in *post-optimal analysis* of solutions to parameterized equilibrium problems, in the treatment of the so-called equilibrium constraints, and also in the *generalized differential calculus.*

Our main attention will be concentrated on the verification of two distinguished Lipschitzian stability properties, namely, the existence of a single-valued Lipschitzian localization and the Aubin (Lipschitz-like) property. To this aim, the basic generalized derivatives will be introduced and some first- and second-order rules of the generalized differential calculus will be presented. This background enables us to derive workable criteria for the mentioned stability properties which are applicable, e.g., in multifunctional extensions of the classical Implicit function theorem. In turn, these results create a theoretical basis for the so-called *Implicit programming approach*, which is an efficient technique for the treatment of a fairly broad class of optimization problems with parameterized equilibria among the constraints. The lecture will end up with a refinement of the derived condition, guaranteeing the Aubin property of implicit multifunctions. To this purpose, we employ the recently defined *directional limiting coderivative* which allows a fine analysis of the investigated multifunctions *along specified directions*.