1163-49-415   **Tan Cao**, **Giovanni Colombo**, **Boris Mordukhovich** and **Dao Nguyen***
(`gc9683@wayne.edu`), 4500 Cass Ave, Apt 718, Detroit, MI 48201. *Optimization and discrete approximation of sweeping processes and its applications.*

This talk addresses a new class of optimal control problems for perturbed sweeping processes which are governed by the maximal monotone mappings. We develop a constructive discrete approximation procedure, employ advanced tools of first-order and second-order variational analysis and generalized differentiation, derive numerical algorithms to compute second-order constructions, and necessary optimality conditions for discrete optimal solutions under fairly general assumptions formulated entirely in terms of the given data. The obtained results give us efficient suboptimality ("almost optimality") conditions for the original sweeping control problem that are illustrated by several numerical examples.

This is based on joint work with Tan Cao, Giovanni Colombo, Boris Mordukhovich. (Received September 05, 2020)

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