February 25, 2026
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Filippov's Theorem for Volterra Sweeping processes

Abstract

In this talk, we focus on stability theorems of Filippov's kind addressed by Donchev and Farkhi [2] in the convex and nonconvex case, in which the authors replace the Lipschitz condition on the right-hand side of differential inclusions at the famous Filippov's theorem [1] with a weaker one-sided Lipschitz (**OSL**) condition. This theorem gives approximation and stability properties of the solutions and reachable sets of a differential inclusion with compact right-hand side, with respect to perturbations on the right-hand side and on the initial condition of the inclusion. Based on a reduction result for Volterra sweeping processes, together with a existence results of solutions for the integro-differential sweeping process with outer multivalued pertubation and a selection result proved in [4], we have obtained a new extension of the Filippov theorem for Volterra Sweeping Processes under an outer multivalued pertubation satisfying the one-sided Lipschitz (**OSL**) condition [3].

Joint work with:
Abderrahim Jourani and **Emilio Vilches**

References

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[1]Partially supported by ANID-Chile FONDECYT Postdoctorado 2024 N° 3240146, e-mail: diana.narvaez@postdoc.uoh.cl, dnarvaez@dim.uchile.cl