

53. Zvi Artstein, **Parameterized integration of multifunctions with applications to control and optimization.** SIAM J. Control and Opt. 27 (1989), 1369-1380. (Reprinted in: Games and Economic Theory, S. Hart and A. Neyman, eds.), Univ. of Michigan Press, Ann Harbor, 1995, pp. 437-448.)

Abstract. Integration of a set-valued map depending on a parameter is examined. If a point in the range depends measurably on the parameter, then it is the integral of a selection that depends measurably on the parameter. This is proved in the paper and applied in two cases: a control setting, where a Filippov-type lemma for chattering systems is verified, and an optimization problem, where existence of unvarying solutions to asymptotic stochastic maximization is established.

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