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Nonanticipating set-valued mappings and constructions of the programmed iterations method

A problem of constructing nonanticipating selectors of set-valued mappings is considered. To solve it a "direct" variant of the programmed iterations method used earlier in problems of the theory of differential games is applied. Sufficient conditions are established for an iterative realization of the largest (with respect to inclusion) selector of an a priori set-valued mapping. Stratification of the realizing operator presented as the point-wise intersection of projectors is constructed. A representation of the desired nonanticipating selector in terms of "universal" fixed point is established. A localization and parallel version of the basic iterative procedure is investigated. Applications to control problems under indefiniteness are considered.

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