ICM 1998, Berlin, Aug. 18–27

Abstracts of Short Communications and Posters

Section:

17. Control Theory and Optimization

1991 MS Classification: 49

Stein, Oliver, Aachen University of Technology

On level sets of marginal functions

The investigation of level sets of marginal functions is motivated by aspects generalized semi-infinite programming. Here, the feasible set M is a level set of the marginal function corresponding to the lower level problem. We study the local structure of M at feasible boundary points in the generic case, where we focus on two special subcases.

In the first case, where the number of active indices is maximal, M is shown to be locally diffeomorphic to the non-negative orthant. In the second case a generic situation arises which is typical for generalized semi-infinite programming. Here, M can exhibit a re-entrant corner or even local non-closedness, depending on whether the Mangasarian-Fromovitz constraint qualification holds at the unique active index.