

Classes of search directions in interior-point algorithms for linear complementarity problems

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Abstract

In this talk we deal with interior-point algorithms (IPAs) for monotone linear complementarity problems (LCPs). It is well-known that the efficiency of these methods depends on the way of finding the search directions in each step of the algorithm. This is valid especially for the practical implementations, but in some cases for the theoretical iteration complexity as well. Therefore, in the literature of IPAs special emphasis was given on the different methods of determining these directions. The most widely known directions are based on kernel functions, such as the class of self-concordant, self-regular or eligible barriers. However, in this talk we address also the possibilities of introducing classes based on the technique of algebraic equivalent transformation. The purpose of this talk is to analyse these classes and to present some open questions.