Predictor-corrector interior-point algorithm with two different classes of algebraically equivalent transformations

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Recently, Illés, Rigó and Török presented a predictor-corrector interior-point algorithm for $P_*(\kappa)$-linear complementarity problems based on a new class of algebraically equivalent transformation. In this talk we extend the algorithm of Illés et al. to $P_*(\kappa)$-horizontal linear complementarity problems over Cartesian product of symmetric cones.

We propose a modification of the class of algebraically equivalent transformation functions defined by Illés et al., by considering two different classes of functions for defining the predictor and the corrector search directions in each iteration. To the best of our knowledge, this represents the first interior-point algorithm that uses two distinct algebraically equivalent transformation functions within a single iteration.