## A Smoothing Projected Newton-Type Algorithm for Semi-In...nite Programming

Chen Ling Department of Applied Mathematics The Hong Kong Polytechnic University Hung Hom, Kowloon, Hong Kong E-mail: 01902146r@polyu.edu.hk.

## Abstract

The semi-in...nite programming problem arises from various application. It is hard to solve because of its in...nite constraints. In this talk, we present a smoothing projected Newton-type method for solving the semi-in...nite programming (SIP) problem. We ...rst reformulate the KKT system of the SIP problem into a system of constrained nonsmooth equations. Then we solve this system by a smoothing projected Newton-type algorithm. At each iteration only a system of linear equations needs to be solved. The feasibility is ensured via the aggregated constraint. Global and local superlinear convergence of this method is established under some standard assumptions. Numerical results show that the method is promising.

Key Words: Semi-in...nite programming, KKT system, constrained equations, smoothing Newton method, Integral aggregation, convergence.