Buletin Ştiinţific - Universitatea din Piteşti
Seria Matematică şi Informatică, Nr. **17** (2011), pg.5-10

Linear Semi-infinite Programming with Weighted Entropic Perturbation

Costel BĂLCĂU*

November, 2011

Abstract

We apply a weighted entropic perturbation and the cutting plane method for ε-optimal solving of a linear semi-infinite programming problem.

2010 Mathematics Subject Classification: Primary 90C34; Secondary 90C05, 90C25, 94A17.

Key words and phrases: linear semi-infinite programming, weighted entropic perturbation, cutting plane method, ε-optimal solution.

1 Problem statement

Consider the linear semi-infinite programming problem:

$$(P): \left| \begin{array}{l} \min\ \mathrm{c}^\top \mathrm{x} \quad \text{s.t.} \\ \sum\limits_{j=1}^{n} a_j(t) x_j \geq b(t),\ \forall t \in T, \\ \mathrm{x} \geq 0, \end{array} \right.$$

where $\mathrm{x} = (x_1, \ldots, x_n)^\top \in \mathbb{R}^n$ is the variable vector, $\mathrm{c} = (c_1, \ldots, c_n)^\top \in \mathbb{R}^n$ is a known vector, $n \in \mathbb{N}^*$, T is a compact metric space with an

*Department of Mathematics and Informatics, University of Piteşti, 1 Târgu din Vale Street, Piteşti 110040, Romania, `costel.balcau@upit.ro`