



# Extension of the $\nu$ -metric for stabilizable plants over $H^\infty$

Amol Sasane

(Submitted on 29 Jul 2011 (v1), last revised 7 Oct 2011 (this version, v3))

An abstract  $\nu$ -metric was introduced by Ball and Sasane, with a view towards extending the classical  $\nu$ -metric of Vinnicombe from the case of rational transfer functions to more general nonrational transfer function classes of infinite-dimensional linear control systems. In this short note, we give an important concrete special instance of the abstract  $\nu$ -metric, by verifying that all the assumptions demanded in the abstract set-up are satisfied when the ring of stable transfer functions is the Hardy algebra  $H^\infty$ . This settles the open question implicit in [\cite{BalSas2}](#).

Comments: 12 pages

Subjects: **Optimization and Control (math.OC)**; Systems and Control (cs.SY); Analysis of PDEs (math.AP); Functional Analysis (math.FA); Rings and Algebras (math.RA)

MSC classes: 93B36, Secondary 93D15, 46J15

Cite as: [arXiv:1107.5928 \[math.OC\]](#)

(or [arXiv:1107.5928v3 \[math.OC\]](#) for this version)

## Submission history

From: Amol Sasane [[view email](#)]

[\[v1\]](#) Fri, 29 Jul 2011 10:58:03 GMT (13kb)

[\[v2\]](#) Wed, 3 Aug 2011 15:01:10 GMT (15kb)

[\[v3\]](#) Fri, 7 Oct 2011 10:12:53 GMT (16kb)

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