Mathematics > Functional Analysis

On shape preserving semigroups

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(Submitted on 25 Jul 2011 (v1), last revised 13 Oct 2011 (this version, v2))

Motivated by positivity-, monotonicity-, and convexity preserving differential equations, we introduce a definition of shape preserving operator semigroups and analyze their fundamental properties. In particular, we prove that the class of shape preserving semigroups is preserved by perturbations and taking limits. These results are applied to partial delay differential equations.

Comments:	referees comments incorporated. To appear in Archiv der Mathematik (Basel)
Subjects:	**Functional Analysis (math.FA)**
MSC classes:	47D06
DOI:	10.1007/s00013-011-0340-4
Cite as:	**arXiv:1107.5075 [math.FA]**
	(or **arXiv:1107.5075v2 [math.FA]** for this version)

Submission history

From: András Bátkai [view email]
[v1] Mon, 25 Jul 2011 21:18:42 GMT (12kb)
[v2] Thu, 13 Oct 2011 09:04:30 GMT (29kb)

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