



Sharp estimates involving A_∞ and $L \log L$ constants, and their applications to PDE

Alexander Reznikov, Oleksandra Beznosova

(Submitted on 10 Jul 2011)

It is a well known fact that the union of the Reverse Hölder classes coincides with the union of the Muckenhoupt classes A_p , but the A_∞ constant of the weight w , which is a limit of its A_p constants, is not a natural characterization for the weight in Reverse Hölder classes. We introduce the RH_1 condition as a limiting case of the RH_p inequalities as p tends to 1. Then we show sharp bound on RH_1 constant of the weight w in terms of its A_∞ constant (from above and from below). We also prove the sharp version of the Gehring theorem for the case $p=1$, completing the answer to the famous question of Bojarski in dimension one.

We illustrate our results by two straight-forward applications: to the Dirichlet problem for elliptic PDE's.

Subjects: **Classical Analysis and ODEs (math.CA)**; Analysis of PDEs (math.AP)

Cite as: [arXiv:1107.1885](#) [math.CA]
(or [arXiv:1107.1885v1](#) [math.CA] for this version)

Submission history

From: Alexander Reznikov [[view email](#)]
[v1] Sun, 10 Jul 2011 19:24:18 GMT (90kb)

[Which authors of this paper are endorsers?](#)

Download:

- [PDF](#)
- [PostScript](#)
- [Other formats](#)

Current browse context:

math.CA

[< prev](#) | [next >](#)

[new](#) | [recent](#) | [1107](#)

Change to browse by:

[math](#)

[math.AP](#)

References & Citations

- [NASA ADS](#)

Bookmark (what is this?)

