Mathematics > Analysis of PDEs

Singularities of the divergence of continuous vector fields and uniform Hausdorff estimates

Augusto C. Ponce

(Submitted on 4 Jun 2012 (v1), last revised 11 Sep 2012 (this version, v2))

We prove that every closed set which is not sigma-finite with respect to the Hausdorff measure H^{N-1} carries singularities of continuous vector fields in the Euclidean space R^N for the divergence operator. We also show that finite measures which do not charge sets of sigma-finite Hausdorff measure H^{N-1} can be written as an L^1 perturbation of the divergence of a continuous vector field. The main tool is a property of approximation of measures in terms of the Hausdorff content.

Subjects:	**Analysis of PDEs (math.AP)**; Metric Geometry (math.MG)
MSC classes:	28A78 (Primary) 35B60, 35A20, 35F05 (Secondary)
Cite as:	**arXiv:1206.0624** [math.AP]
	(or **arXiv:1206.0624v2** [math.AP] for this version)

Submission history

Which authors of this paper are endorsers?

Download:

- PDF
- PostScript
- Other formats

Current browse cont

math.AP
< prev | next >
new | recent | 1206

Change to browse b

math
   math.MG

References & Citatio

- NASA ADS

Bookmark(what is this?)

Link back to: arXiv, form interface, contact.