

ISSN 2451-7100

# IMAL preprints

<http://www.imal.santafe-conicet.gov.ar/publicaciones/preprints/index.php>

## MUCKENHOUP T WEIGHTS WITH SINGULARITIES ON CLOSED LOWER DIMENSIONAL SETS IN SPACES OF HOMOGENEOUS TYPE

By

Hugo Aimar, Marilina Carena and Marisa Toschi

IMAL PREPRINT # 2014-0018

Publication date: July 15, 2014

Editorial: Instituto de Matemática Aplicada del Litoral  
IMAL (CCT CONICET Santa Fe – UNL)  
<http://www.imal.santafe-conicet.gov.ar>

Publications Director: Dr. Rubén Spies  
E-mail: [rspies@santafe-conicet.gov.ar](mailto:rspies@santafe-conicet.gov.ar)

I M A L

---





ELSEVIER

Contents lists available at ScienceDirect

## Journal of Mathematical Analysis and Applications

[www.elsevier.com/locate/jmaa](http://www.elsevier.com/locate/jmaa)


# Muckenhoupt weights with singularities on closed lower dimensional sets in spaces of homogeneous type $\star$



Hugo Aimar <sup>a</sup>, Marilina Carena <sup>b</sup>, Marisa Toschi <sup>a,\*</sup>

<sup>a</sup> *Instituto de Matemática Aplicada del Litoral (CONICET-UNL), Departamento de Matemática (FIQ-UNL), Santa Fe, Argentina*

<sup>b</sup> *Instituto de Matemática Aplicada del Litoral (CONICET-UNL), Departamento de Matemática (FHUC-UNL), Santa Fe, Argentina*

## ARTICLE INFO

*Article history:*

Received 7 May 2013

Available online 18 February 2014

Submitted by P. Koskela

*Keywords:*

Muckenhoupt weights

Spaces of homogeneous type

Ahlfors spaces

Hardy–Littlewood maximal operator

## ABSTRACT

We give sufficient conditions on a real number  $\beta$  and on a closed set  $F$  in a general space of homogeneous type  $(X, d, \mu)$  in such a way that  $\mu(B(x, d(x, F)))^\beta$  becomes a Muckenhoupt weight. In order to prove our result, we modify the underlying space so that it becomes 1-Ahlfors regular.

© 2014 Elsevier Inc. All rights reserved.