

Accepted Manuscript

Fractional derivative models for atmospheric dispersion of pollutants

A.G.O. Goulart, M.J. Lazo, J.M.S. Suarez, D.M. Moreira

PII: S0378-4371(17)30142-5

DOI: <http://dx.doi.org/10.1016/j.physa.2017.02.022>

Reference: PHYSA 18002

To appear in: *Physica A*

Received date: 24 December 2016

Revised date: 28 January 2017

Please cite this article as: A.G.O. Goulart, et al., Fractional derivative models for atmospheric dispersion of pollutants, *Physica A* (2017), <http://dx.doi.org/10.1016/j.physa.2017.02.022>

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.



Highlights

The potential application of fractional derivatives to model diffusion of pollutants in the atmosphere is investigated.

We propose two fractional differential equation models for the spatial distribution of concentration of a non-reactive pollutant in Planetary Boundary Layer.

We solve the models and we compare the solutions with traditional integer order derivative models and with a real experiment.

Download English Version:

<https://daneshyari.com/en/article/5103173>

Download Persian Version:

<https://daneshyari.com/article/5103173>

[Daneshyari.com](https://daneshyari.com)