

# A simple solution for the general fractional Ambartsumian equation

Manuel Ortigueira<sup>1</sup> and Gabriel Bengochea<sup>2</sup>

<sup>1</sup>Faculty of Sciences and Technology of Universidade Nova de Lisboa

<sup>2</sup>Colegio de Ciencia y Tecnología, Universidad Autónoma de la Ciudad de México

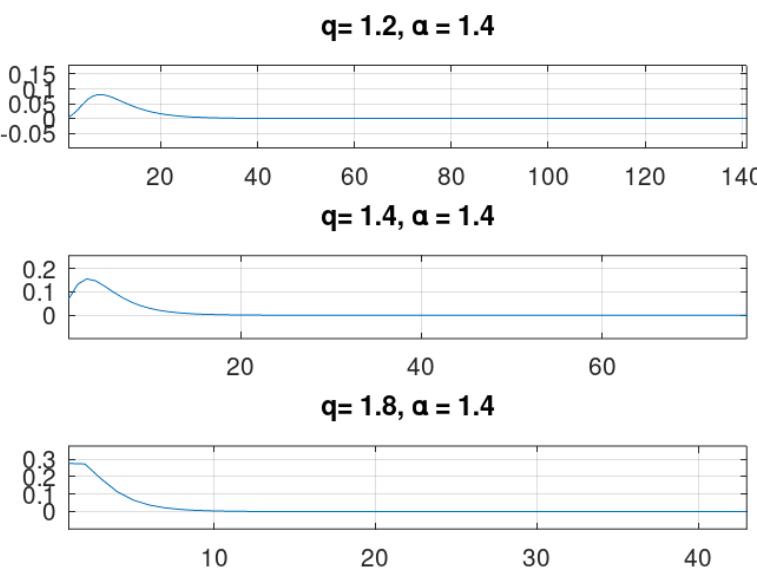
June 10, 2022

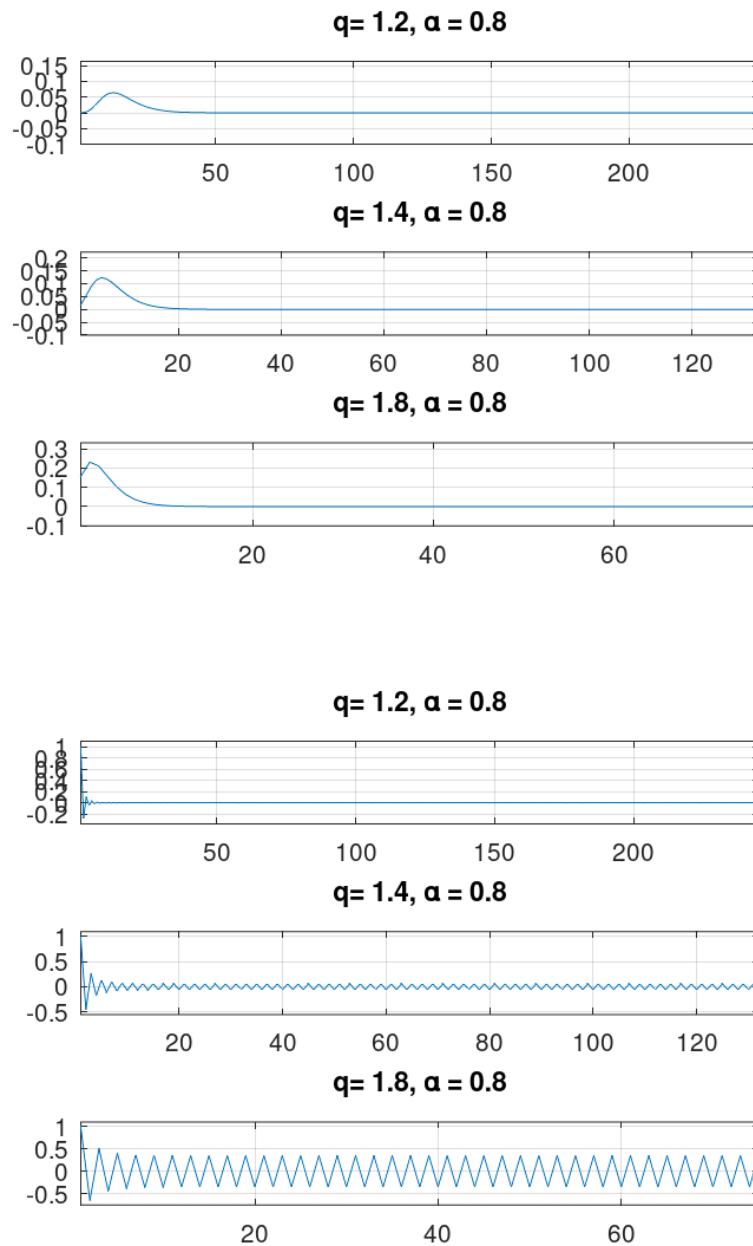
## Abstract

The Ambartsumian equation is studied and solved. A simple solution expressed in terms of a linear combination of Mittag-Leffler functions is deduced and implemented. A fast algorithm for its numerical realization is described and exemplified.

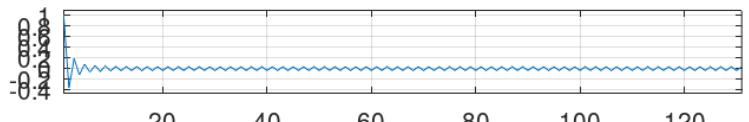
## Hosted file

AE.pdf available at <https://authorea.com/users/31632/articles/572512-a-simple-solution-for-the-general-fractional-ambartsumian-equation>

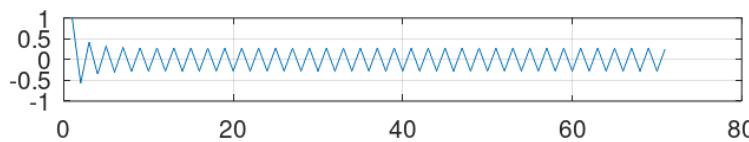




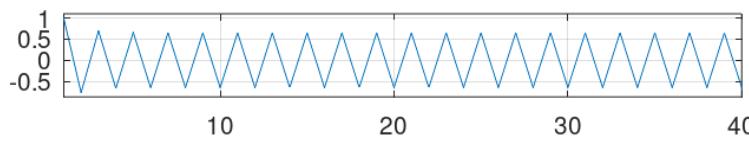
**$q = 1.2, \alpha = 1.5$**



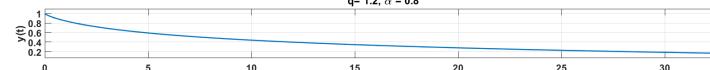
**$q = 1.4, \alpha = 1.5$**



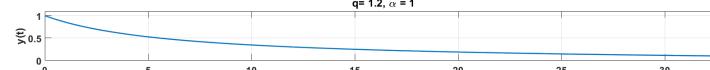
**$q = 1.8, \alpha = 1.5$**



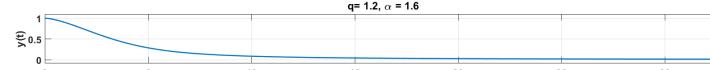
**$q = 1.2, \alpha = 0.8$**



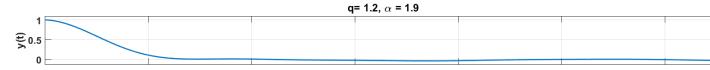
**$q = 1.2, \alpha = 1$**



**$q = 1.2, \alpha = 1.6$**



**$q = 1.2, \alpha = 1.9$**



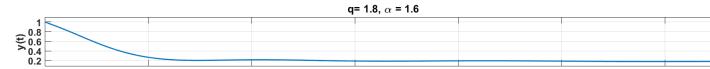
**$q = 1.8, \alpha = 0.8$**



**$q = 1.8, \alpha = 1$**



**$q = 1.8, \alpha = 1.6$**



**$q = 1.8, \alpha = 1.9$**

