

## Accepted Manuscript

On the motion of substance in a channel of a network and human migration

Nikolay K. Vitanov, Kaloyan N. Vitanov



PII: S0378-4371(17)30771-9  
DOI: <http://dx.doi.org/10.1016/j.physa.2017.08.038>  
Reference: PHYSA 18484

To appear in: *Physica A*

Received date: 26 February 2017

Revised date: 16 May 2017

Please cite this article as: N.K. Vitanov, K.N. Vitanov, On the motion of substance in a channel of a network and human migration, *Physica A* (2017), <http://dx.doi.org/10.1016/j.physa.2017.08.038>

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

1. A model is discussed for motion of substance in a channel consisting of nodes of a network.
2. Heavy tailed distributions are obtained for the amount of substance in the nodes of the channel.
3. The model is applied to human migration in a chain of countries.
4. Conditions for concentration of migrants in a country of the channel are obtained.
5. Zipf distribution for number of migrants is obtained for country borders with limited permeability and large attractiveness of the final destination country.
6. The decrease of number of migrants in the channel by limiting the number of migrants arriving in the incoming country is more effective than a decrease by reducing permeability of the borders between countries of the channel.

Download English Version:

<https://daneshyari.com/en/article/5102493>

Download Persian Version:

<https://daneshyari.com/article/5102493>

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