

Accepted Manuscript

Title: Analysis of worm-like locomotion driven by the sine-squared strain wave in a linear viscous medium

Author: Ziwang Jiang Jian Xu

PII: S0093-6413(16)30095-7

DOI: <http://dx.doi.org/doi:10.1016/j.mechrescom.2017.07.006>

Reference: MRC 3191

To appear in:

Received date: 14-8-2016

Revised date: 8-3-2017

Accepted date: 21-7-2017



Please cite this article as: Ziwang Jiang, Jian Xu, Analysis of worm-like locomotion driven by the sine-squared strain wave in a linear viscous medium, *Mechanics Research Communications* (2017), <http://dx.doi.org/10.1016/j.mechrescom.2017.07.006>

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.

The paper's highlights are listed as follows

1. The full dynamic model of one-dimensional worm-like locomotion is developed.
2. The effect of parameters such as friction coefficient, wave speed, linear density and body length on worm-like locomotion is studied.
3. The reduced condition of the dynamic model is presented based on the relative error criterion in the case of the SSSW.
4. A reduced model named quasi-static model is utilized to obtain the condition in which the system driven by SSSW outweighs that driven by SSW. Then the results are verified by numerical simulation.

Download English Version:

<https://daneshyari.com/en/article/5018574>

Download Persian Version:

<https://daneshyari.com/article/5018574>

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