Patent Search

Invention Title	Nano-Fluid Stream along Stochastic Non-Newtonian Mixing With Harmonic Oscillator Sheet Computational Dynamic Model
Publication Number	18/2023
Publication Date	05/05/2023
Publication Type	INA
Application Number	202341028900
Application Filing Date	20/04/2023
Priority Number	
Priority Country	
Priority Date	
Field Of Invention	COMMUNICATION
Classification (IPC)	D01D 050980, G06F 211000, G06Q 300600, H04N 214820, H04N 216334

Inventor

Name	Address	Country
Dr.K.Sarada, Assistant Professor / Department of Mathematics, Government City College (A).	Government City College (A), Nayapul, Hyderabad, Telangana-500002.	India
Dr. D Purna Chandar Rao, Assistant Professor / Department of Mathematics, Matrusri Engineering College.	Matrusri Engineering College, Saidabad Rd, Hyderabad, Telangana-500059.	India
Srinivas Reddy C, Assistant Professor / Department of Mathematics, Government City College (A).	Government City College (A), Nayapul, Hyderabad, Telangana-500002.	India
L.Vishnu priya, Assistant Professor / Department of Mathematics, Vivekananda Government Degree College.	Vivekananda Government Degree College, Adikmet, Vidya Nagar, Hyderabad, Telangana-500044.	India
KM.Swarna Latha, Assistant Professor / Department of Mathematics, Government City College (A)	Government City College (A), Nayapul, Hyderabad, Telangana-500002.	India
Dr. G Venu Gopala Krishna, Assistant Professor (C) / Department of Mathematics, UCEN-JNTUK.	UCEN-JNTUK, Narasaraopeta, A.P-522616.	India
Dr. P. Srilatha, Associate Professor / Department of Mathematics, Institute of Aeronautical Engineering.	Institute of Aeronautical Engineering, Dundigal Road, Hyderabad, Telangana-500043.	India

Applicant

Name	Address	Country
Dr.K.Sarada, Assistant Professor / Department of Mathematics, Government City College (A).	Government City College (A), Nayapul, Hyderabad, Telangana-500002.	India
Dr. D Purna Chandar Rao, Assistant Professor / Department of Mathematics, Matrusri Engineering College.	Matrusri Engineering College, Saidabad Rd, Hyderabad, Telangana-500059.	India
Srinivas Reddy C, Assistant Professor / Department of Mathematics, Government City College (A).	Government City College (A), Nayapul, Hyderabad, Telangana-500002.	India
L.Vishnu priya, Assistant Professor / Department of Mathematics, Vivekananda Government Degree College.	Vivekananda Government Degree College, Adikmet, Vidya Nagar, Hyderabad, Telangana-500044.	India
KM.Swarna Latha, Assistant Professor / Department of Mathematics, Government City College (A)	Government City College (A), Nayapul, Hyderabad, Telangana-500002.	India
Dr. G Venu Gopala Krishna, Assistant Professor (C) / Department of Mathematics, UCEN-JNTUK.	UCEN-JNTUK, Narasaraopeta, A.P-522616.	India
Dr. P. Srilatha, Associate Professor / Department of Mathematics, Institute of Aeronautical Engineering.	Institute of Aeronautical Engineering, Dundigal Road, Hyderabad, Telangana-500043.	India

Abstract:

Abstract Using stochastic simulations, researchers can account for uncertainties in mathematical fluid dynamics that go beyond those introduced by numerical discre authors now validate these developing stochastic modelling techniques by providing instances of stochastic computations of incompressible flows along with numeri It is shown how to develop a numerical technique for solving stochastic parabolic equations. The approach achieves temporal accuracy to the second order for the W process constant coefficient. The scheme's stability study is presented as well. This approach is implemented in a dimensionally-independent model of mixed convec Nano-fluids across oscillatory sheets. The temperature dependence of thermal conductivity is used in both stochastic as well as deterministic new sources of energy. show that when the oscillating plate is involved, the pressure gradient reduces as Brownian motion metric and improves as thermophoresis variables grow. It is show velocity profile behaves in both the deterministic and the stochastic prototypes, and curve charts are shown aimed at the stochastic main model. The work boards to state-of-the-art summary of current advances in the arena of SCMD and highlight potential upcoming paths and unanswered difficulties for the computational mathe group to study.

Complete Specification

Description:Nano-Fluid Stream along Stochastic Non-Newtonian Mixing With Harmonic Oscillator Sheet Computational Dynamic Model

Field and Background of the Invention

Significant effects on fields like uncertainty quantification, the sustainability of noisy networks, and coarse-grained and multi scale creation can be attributed to the analytical simulation of nonlinear equations with a stochastic influence. The accuracy and model construction of the results has been doubted due to the dramatic parameter uncertainty research concerning massive simulation analysis in the past several years. Yet, like experimental sciences, simulation builds its models from ground up rather than as an afterthought when they are more susceptible to a posteriori error. The study of realistic flow simulation that accounts for physical para like constitutive rules, boundary and beginning variables, transportation coefficient, origin and relation variables, and geometrical abnormalities is currently at the f of scientific inquiry. Self-assembly procedures and massive, unexpected perturbations in flow past aviation are examples of noisy non-linear systems that span fron Nano to the meta. In contrast to deterministic dynamical systems, the stochastic one features bifurcation and disordered transitions. More investigation is required elaborate on the non-linear interaction predictions made by the system on the exterior and intrinsic stochastic modelling. For example, background turbulence and variety of minor scales can be found in a turbulent boundary layer flow, but they do not significantly alter the flow.

On the other hand, flow with low Rd numbers and noise levels may severely disrupt the average flow structure. Among systems with several degrees of freedom, th turbulent flow concept at high Rd numbers or atomic level models of microscopic processes is the utmost exciting. However, coarse-grained systems gradually dimi system's freedom of movement, increasing the system's gross energy. Therefore, nonlinear systems are paramount for efficient and scalable stochastic computatio

View Application Status