

## A Study of the Formation, Existence and Stability of Localised Pulses in PDE

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**Abstract :** TOPIC: A study of the formation, existence and stability of localised pulses in pde Ayaz Ahmad, NITP, Abstract: In this paper we try to govern the evolution deterministic variable over space and time. We analysis the behaviour of the model which allows us to predict and understand the possible behaviour of the physical system. Bifurcation theory provides a basis to systematically investigate the models for invariant sets. Exploring the behaviour of PDE using bifurcation theory which provides many challenges both numerically and analytically. We use the derivation of a non linear partial differential equation which may be written in this form  $\partial u/\partial t + c \partial u/\partial x + \epsilon(\partial^3 u)/(\partial x^3) + \gamma u \partial u/\partial x = 0$  We show that the temperature increased convection cells forms. Through our work we look for localised solution which are characterised by sudden burst of aeroidic spatio-temporal evolution. Key word: Gaussian pulses, Aeriodic, spatio-temporal evolution, convection cells, nonlinearoptics, Dr Ayaz ahmad Assistant Professor Department of Mathematics National institute of technology Patna, Bihar, India 800005 Ayaz1970@gmail.com +91994907553

**Keywords :** Gaussian pulses, aeriodic, spatio-temporal evolution, convection cells, nonlinear optics

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