

Solitary Waves and Fluctuations in Fragile Matter Upadhyaya, N.

Citation

Upadhyaya, N. (2013, November 5). *Solitary Waves and Fluctuations in Fragile Matter. Casimir PhD Series*. Retrieved from https://hdl.handle.net/1887/22138

Version: Not Applicable (or Unknown)

License: Leiden University Non-exclusive license

Downloaded from: https://hdl.handle.net/1887/22138

 ${f Note:}$ To cite this publication please use the final published version (if applicable).

Cover Page



Universiteit Leiden



The handle http://hdl.handle.net/1887/22138 holds various files of this Leiden University dissertation.

Author: Upadhyaya, Nitin Title: Solitary waves and fluctuations in fragile matter

Issue Date: 2013-11-05

I was born in Hyderabad, India on the first of July, 1981. My parents moved to New Delhi in 1982, where I then obtained my school education. In 2004, I obtained a bachelors degree from the department of Electrical Engineering at the Indian Institute of Technology, New Delhi.

Between 2004-2007, I worked intermittently in semiconductor digital design, first for Biomorphic Microsystems and then Freescale Semiconductors , involved in designing and testing digital circuits for CMOS image sensors and universal serial bus (usb) interface. In 2008, I joined the University of Waterloo in Canada to pursue my masters studies with a thesis on the hydrodynamical description of the equilibrium properties of two-dimensional complex plasma. In 2010, I joined the Lorentz Institute, Leiden, Netherlands for a PhD in theoretical physics.

During my masters studies, I assisted in undergraduate courses on calculus and ordinary differential equations. During graduate studies at Leiden, I assisted in masters courses in fluid mechanics and quantum theory.

PUBLICATIONS

- Shear shocks in fragile networks , S.Ulrich, N. Upadhyaya, B.V. Opheusden and V. Vitelli, arXiv:1307.7665 (2013).
- Soliton attenuation and emergent hydrodynamics of fragile matter, N. Upadhyaya, L. R. Gomez and V. Vitelli, arXiv:1304.6692 (2013).
- Solitons and thermal fluctuations in strongly non-linear solids, N. Upadhyaya, A. M. Turner and V. Vitelli, arXiv:1304.6684 (2013).
- Transmission and reflection of strongly nonlinear solitary waves at granular interfaces, A. Tichler, L. R. Gomez, N. Upadhyaya, X. Campman, V. F. Nesterenko and V. Vitelli, Phys. Rev. Lett., 111, 048001 (2013).
- Quantum buckling, N. Upadhyaya and V. Vitelli, Phys. Rev. E, 84, 040601(R) (2011).
- A full account of compressional wave in 2D strongly coupled complex (dusty) plasmas: Theory, experiment and numerical simulation, N. Upadhyaya, V. Nosenko, Z. L. Miskovic, L.-J. Hou, A. V. Ivlev and G. E. Morfill, Eur. Phys. Lett., 94 65001 (2011).
- Dispersion and damping of two-dimensional dust acoustic waves: theory and simulation, N. Upadhyaya, Z L Miskovic and L-J Hou New J. Phys., 12 093034 (2010).
- Structure of 2D dusty plasmas in the presence of perpendicular ion flow, N. Upadhyaya, L.J. Hou and Z.L. Miskovic, Phys. Lett. A, 374 (2010).
- Modeling electrolytically top gated graphene, Z.L. Miskovic and N. Upadhyaya, Nano. Res. Lett., 5,505-511 (2010).

MEANDERINGS

And so, as I begin the long walk back, there is much to reflect and remember.

Of a journey, that like all, began being lost and then, a hesitant knock.

Whence, the wise gatekeeper, with a twinkle in his eyes, winked me in, to meander through his magical world...

Of crests and troughs, and cracks and swirls.
Of incessant waves, that were forever at play.

Of particles trapped in a box, and their occasional escapades. Of lights, sounds and action, that orchestrated any new day.

But the absurd, my ever so loyal companion, hastens to remind me today...

That a beginning is, inevitably entwined with an end, and that back at the doorsteps, all is but a little more unknown. And I, just as lost.

Yet, not without solace.
For through my years of wandering restlessly, as a mere remnant of those clouded memories, I have often questioned the heavens.
And slowly, ever so slowly, has an answer so manifest, unveiled.
Right here...

In those forever fleeting moments, of innocence and beauty.
In the verses of a dear poet, that miraculously reach me from across the seas. In the kindnesses of the gatekeeper, who welcomed me with open arms. And in those gentle hands, that continue to rock my cradle.