



# Physics

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[151] [arXiv:1106.1855](#) [[pdf](#), [ps](#), [other](#)]

### **Perturbation Theory for PT-Symmetric Sinusoidal Optical Lattices at the Symmetry-Breaking Threshold**

[H. F. Jones](#)

Comments: Some references corrected

Subjects: **Optics** ([physics.optics](#))

[152] [arXiv:1106.1881](#) [[pdf](#), [ps](#), [other](#)]

### **Inductively Coupled Augmented Railgun**

[Thomas B. Bahder](#), [William C. McCorkle](#)

Comments: 7 pages, 7 figures

Subjects: **Classical Physics** ([physics.class-ph](#))

[153] [arXiv:1106.1915](#) [[pdf](#)]

### **Abstract art grandmasters score like class D amateurs**

[M.V. Simkin](#)

Journal-ref: Significance, Web exclusive articles, June 29, 2011

Subjects: **Popular Physics** ([physics.pop-ph](#)); Applications ([stat.AP](#))

[154] [arXiv:1106.1931](#) [[pdf](#), [other](#)]

### **Ordering of small particles in one-dimensional coherent structures by time-periodic flows**

[Dmitri Pushkin](#), [Denis Melnikov](#), [Valentina Shevtsova](#)

Journal-ref: Phys. Rev. Lett. 106, 234501 (2011)

Subjects: **Fluid Dynamics** ([physics.flu-dyn](#)); Chaotic Dynamics ([nlin.CD](#))

[155] [arXiv:1106.1946](#) [[pdf](#)]

### **Development of front-end readout electronics for silicon strip detectors**

[Yi Qian](#), [Hong Su](#), [Jie Kong](#), [Cheng-Fu Dong](#), [Xiao-Li Ma](#), [Xiao-Gang Li](#)

Comments: This article has been submitted to Chinese Physics C

Subjects: **Instrumentation and Detectors** ([physics.ins-det](#)); High Energy Physics - Experiment ([hep-ex](#))

[156] [arXiv:1106.1963](#) [[pdf](#), [ps](#), [other](#)]

### **Predicting Zonal Flows -- A Comprehensive Reynolds-Stress**

# Response-Functional from First-Principles-Plasma-Turbulence Computations

Niels Guertler, Klaus Hallatschek

Subjects: **Plasma Physics (physics.plasm-ph)**

[157] [arXiv:1106.1981](#) [[pdf](#), [ps](#), [other](#)]

## Full orbit simulations of collisional impurity transport in spherical tokamak plasmas with strongly-sheared electric fields

C. G. Wrench, E. Verwichte, K. G. McClements

Comments: 16 pages, 6 figures, submitted to Nuclear Fusion

Subjects: **Plasma Physics (physics.plasm-ph)**

[158] [arXiv:1106.1988](#) [[pdf](#), [ps](#), [other](#)]

## Tensorial form and matrix elements of the relativistic nuclear recoil operator

E. Gaidamauskas, C. Nazé, P. Rynkun, G. Gaigalas, P. Jönsson, M. Godefroid

Comments: 22 pages, no figures, submitted to J. Phys. B

Subjects: **Atomic Physics (physics.atom-ph)**

[159] [arXiv:1106.2001](#) [[pdf](#), [other](#)]

## Nonlocal Nonlinear Optics in cold Rydberg Gases

S. Sevinçli, N. Henkel, C. Ates, T. Pohl

Comments: 5 pages, 5 figures

Subjects: **Atomic Physics (physics.atom-ph)**; Quantum Gases (cond-mat.quant-gas); Optics (physics.optics)

[160] [arXiv:1106.2007](#) [[pdf](#), [other](#)]

## The emergence of complex patterns in online human communication

Joachim Mathiesen, Pernilly Yde, Mogens H. Jensen

Comments: 9 pages, 4 figures

Subjects: **Physics and Society (physics.soc-ph)**; Human-Computer Interaction (cs.HC); Social and Information Networks (cs.SI)

[161] [arXiv:1106.2009](#) [[pdf](#), [ps](#), [other](#)]

## Spin Hall effect of light in metallic reflection

N. Hermosa, A.M. Nugrowati, Andrea Aiello, J.P. Woerdman

Comments: improved figures;removed redundant discussion;change typo in eqn. 2b

Journal-ref: Opt. Lett. 36, 3200-3202 (2011)

Subjects: **Optics (physics.optics)**

[162] [arXiv:1106.2024](#) [[pdf](#), [ps](#), [other](#)]

## Periodicities in Aerosol Optical Depths

S. Ramachandran, Sayantan Ghosh, Amit Verma, Prasanta K. Panigrahi

Comments: 15 pages, 4 figure, Geophys. Res. Lett. draft format

Subjects: **Atmospheric and Oceanic Physics (physics.ao-ph)**; Data Analysis, Statistics and Probability (physics.data-an)

[163] [arXiv:1106.2038](#) [[pdf](#), [ps](#), [other](#)]

## Folding and unfolding of a triple-branch DNA molecule with four conformational states

Sandra Engel (1), Anna Alemany (2,3), Nuria Forns (2,3), Philipp Maass (1), Felix Ritort (2,3) ((1))

Fachbereich Physik, Universität Osnabrück, Barbarastr., (2) Departament de Física Fonamental, Facultat de Física, Universitat de Barcelona, (3) CIBER-BBN Networking center on Bioengineering, Biomaterials and Nanomedicine, Spain)

Comments: 17 pages, 12 figures

Journal-ref: Philosophical Magazine, 91: 13, 2049 -- 2065

Subjects: **Biological Physics (physics.bio-ph)**; Statistical Mechanics (cond-mat.stat-mech)

[164] [arXiv:1106.2045](#) [[pdf](#), [other](#)]

## **Metallo-dielectric core-shell nanospheres as building blocks for optical 3D isotropic negative-index metamaterials**

[R. Paniagua-Domínguez](#), [F. López-Tejiera](#), [R. Marqués](#), [J. A. Sánchez-Gil](#)

Comments: 16 pages, 7 figures

Subjects: **Optics (physics.optics)**; Other Condensed Matter (cond-mat.other)

[165] [arXiv:1106.2051](#) [[pdf](#), [ps](#), [other](#)]

## **Long-range interactions between ultracold atoms and molecules including atomic spin-orbit**

[Maxence Lepers](#), [Olivier Dulieu](#) (Laboratoire Aimé Cotton, CNRS-Univ. Paris-Sud, Orsay, France)

Comments: Submitted to Phys. Chem. Chem. Phys., special issue on cold molecules

Subjects: **Chemical Physics (physics.chem-ph)**; Atomic Physics (physics.atom-ph); Quantum Physics (quant-ph)

[166] [arXiv:1106.2071](#) [[pdf](#)]

## **Modulation Instability of Ultrashort Pulses in Quadratic Nonlinear Media beyond the Slowly Varying Envelope Approximation**

[Amarendra K. Sarma](#), [Parvendra Kumar](#)

Journal-ref: Appl Phys B (2012) 106:289-293

Subjects: **Classical Physics (physics.class-ph)**; Optics (physics.optics)

[167] [arXiv:1106.2079](#) [[pdf](#), [ps](#), [other](#)]

## **Time duration of the parametric x-ray radiation**

[S. V. Anishchenko](#), [V. G. Baryshevsky](#), [A.A. Gurinovich](#)

Subjects: **Accelerator Physics (physics.acc-ph)**

[168] [arXiv:1106.2124](#) [[pdf](#)]

## **Omni-tomography/Multi-tomography -- Integrating Multiple Modalities for Simultaneous Imaging**

[Ge Wang](#), [Jie Zhang](#), [Hao Gao](#), [Victor Weir](#), [Hengyong Yu](#), [Wenxiang Cong](#), [Xiaochen Xu](#), [Haiou Shen](#), [James Bennett](#), [Yue Wang](#), [Michael Vannier](#)

Comments: 43 pages, 15 figures, 99 references, provisional patent applications filed by Virginia Tech

Subjects: **Medical Physics (physics.med-ph)**; Computer Vision and Pattern Recognition (cs.CV); Numerical Analysis (math.NA); Applications (stat.AP)

[169] [arXiv:1106.2133](#) [[pdf](#), [other](#)]

## **On the dynamics of unobserved Universe**

[Stephane A. Bronoff](#)

Comments: 8 pages, 2 figures; theory formal structure presented in a logically isolated way; speculative items pushed into the discussions section

Subjects: **General Physics (physics.gen-ph)**

[170] [arXiv:1106.2134](#) [[pdf](#), [ps](#), [other](#)]

## Components in time-varying graphs

[V. Nicosia](#), [J. Tang](#), [M. Musolesi](#), [G. Russo](#), [C. Mascolo](#), [V. Latora](#)

Comments: 12 pages, 4 figures, 3 tables

Journal-ref: Chaos, 22, 023101 (2012)

Subjects: **Physics and Society (physics.soc-ph)**; Statistical Mechanics (cond-mat.stat-mech); Social and Information Networks (cs.SI)

[171] [arXiv:1106.2141](#) [[pdf](#)]

## A Low Cost Remote Sensing System Using PC and Stereo Equipment

[Joel F. Campbell](#), [Michael A. Flood](#), [Narasimha S. Prasad](#), [Wade D. Hodson](#)

Comments: Accepted for publication in American Journal of Physics

Journal-ref: American Journal of Physics, Vol 79, Issue 12, Dec 2011

Subjects: **Physics Education (physics.ed-ph)**; Instrumentation and Detectors (physics.ins-det)

[172] [arXiv:1106.2143](#) [[pdf](#)]

## Microburst nowcasting applications of GOES

[Kenneth L. Pryor](#)

Comments: 21 pages, 12 figures, GOES-R Algorithm Working Group 2011 Annual Meeting; 22 pages, 12 figures, addition of tables, text corrections; 22 pages, 9 figures, National Weather Association E-Journal of Operational Meteorology submission format

Subjects: **Atmospheric and Oceanic Physics (physics.ao-ph)**

[173] [arXiv:1106.2178](#) [[pdf](#), [ps](#), [other](#)]

## Consistency of certain constitutive relations with quantum electromagnetism

[S. A. R. Horsley](#)

Comments: 11 pages

Journal-ref: Phys. Rev. A 84, 063822 (2011)

Subjects: **Optics (physics.optics)**; Quantum Physics (quant-ph)

[174] [arXiv:1106.2209](#) [[pdf](#), [ps](#), [other](#)]

## Scintillation-only Based Pulse Shape Discrimination for Nuclear and Electron Recoils in Liquid Xenon

[K.Ueshima](#), [K.Abe](#), [K.Hiraide](#), [S.Hirano](#), [Y.Kishimoto](#), [K.Kobayashi](#), [Y.Koshio](#), [J.Liu](#), [K.Martens](#), [S.Moriyama](#), [M.Nakahata](#), [H.Nishiie](#), [H.Ogawa](#), [H.Sekiya](#), [A.Shinozaki](#), [Y.Suzuki](#), [A.Takeda](#), [M.Yamashita](#), [K.Fujii](#), [I.Murayama](#), [S.Nakamura](#), [K.Otsuka](#), [Y.Takeuchi](#), [Y.Fukuda](#), [K.Nishijima](#), [D.Motoki](#), [Y.Itow](#), [K.Masuda](#), [Y.Nishitani](#), [H.Uchida](#), [S.Tasaka](#), [H.Ohsumi](#), [Y.D.Kim](#), [Y.H.Kim](#), [K.B.Lee](#), [M.K.Lee](#), [J.S.Lee](#) the XMASS Collaboration

Comments: 25 pages, 15 figures

Subjects: **Instrumentation and Detectors (physics.ins-det)**; High Energy Physics - Experiment (hep-ex); Nuclear Experiment (nucl-ex)

[175] [arXiv:1106.2210](#) [[pdf](#), [ps](#), [other](#)]

## On the gravitational fields created by the electromagnetic waves

[A. Loinger](#), [T. Marsico](#)

Comments: 6 pages

Subjects: **General Physics (physics.gen-ph)**

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