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Molde University College

Per Kristian Rekdal, 4th January 2013



- 1 Open Access, science:
 - arXiv

- 2 Open Access, teaching:
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Presentation

- Name: Per Kristian Rekdal
- Age: 40
- Education:
 - M. Sci.: theoretical physics, NTNU, (1992-1997)
 - Ph.D.: quantum optics, NTNU, (1998-2001)
 - Post Doc: quantum optics, Imperial C., (2002-2004)
 - Post Doc: quantum optics, UniGraz, (2005-2006)
- # published papers: 15
- h-index : 6

what is the “arXiv”?

- the arXiv = an archive for electronic preprints of scientific papers in the fields of
 - mathematics
 - physics
 - computer science
 - statistics
 - quantitative finance

what is the “arXiv”? (cont.)



Cornell University
Library

arXiv.org

Open access to 810.966 e-prints in Physics, Mathematics, Computer Science, Quantitative Biology, Quantitative Finance and Statistics

Subject search and browse: **Physics**

19 Oct 2012 arXiv Holiday Schedule

29 Aug 2012 Simons Foundation funds new arXiv sustainability model

See cumulative “What’s New” pages. Read robots beware before attempting any automated download

Physics

- Astrophysics (**astro-ph** new, recent, find)
- Includes: Cosmology and Extragalactic Astrophysics; Earth and Planetary Astrophysics; Galaxy Astrophysics; High Energy Astrophysical Phenomena; Instrumentation and Methods for Astrophysics; Solar and Stellar Astrophysics
- Condensed Matter (**cond-mat** new, recent, find)
- Includes: Disordered Systems and Neural Networks; Materials Science: Mesoscale and Nanoscale Physics; Other Condensed Matter; Quantum Gases; Soft Condensed Matter; Statistical Mechanics; Strongly Correlated Electrons; Superconductivity
- General Relativity and Quantum Cosmology (**gr-qc** new, recent, find)
- High Energy Physics - Experiment (**hep-ex** new, recent, find)
- High Energy Physics - Lattice (**hep-lat** new, recent, find)
- High Energy Physics - Phenomenology (**hep-ph** new, recent, find)
- High Energy Physics - Theory (**hep-th** new, recent, find)
- Mathematical Physics (**math-ph** new, recent, find)
- Nonlinear Sciences (**nlin** new, recent, find)
- Includes: Adaptation and Self-Organizing Systems; Cellular Automata and Lattice Gases; Chaotic Dynamics; Exactly Solvable and Integrable Systems; Pattern Formation and Solitons
- Nuclear Experiment (**nuclex** new, recent, find)
- Nuclear Theory (**nuc-th** new, recent, find)
- Physics (**physics** new, recent, find)
- Includes: Accelerator Physics; Atmospheric and Oceanic Physics; Atomic Physics; Atomic and Molecular Clusters; Biological Physics; Chemical Physics; Classical Physics; Computational Physics; Data Analysis; Statistics and Probability; Fluid Dynamics; Physics and Society; Plasma Physics; Popular Physics; Space Physics
- Quantum Physics (**quant-ph** new, recent, find)

Mathematics

- Mathematics (**math** new, recent, find)
- Includes (see detailed description): Algebraic Geometry; Algebraic Topology; Analysis of PDEs; Category Theory; Classical Analysis and ODEs; Combinatorics; Commutative Algebra; Complex Variables; Differential Geometry; Dynamical Systems; Fun and Homology; Logic; Mathematical Physics; Metric Geometry; Number Theory; Numerical Analysis; Operator Algebras; Optimization and Control; Probability; Quantum Algebra; Representation Theory; Rings and Algebras; Spectral Theory; Statistics 1

Computer Science

- Computing Research Repository (**CoRR** new, recent, find)
- Includes (see detailed description): Artificial Intelligence; Computation and Language; Computational Complexity; Computational Engineering, Finance, and Science; Computational Geometry; Computer Science and Game Theory; Computer Vision and Mathematics; Distributed, Parallel, and Cluster Computing; Emerging Technologies; Formal Languages and Automata Theory; General Literature; Graphics; Hardware Architecture; Human-Computer Interaction; Information Retrieval; Information Theory; Evolutionary Computing; Numerical Analysis; Operating Systems; Other Computer Science; Performance; Programming Languages; Robotics; Social and Information Networks; Software Engineering; Sound; Symbolic Computation; Systems and Control

Quantitative Biology

- Quantitative Biology (**q-bio** new, recent, find)
- Includes (see detailed description): Biobiochemicals; Cell Behavior; Genomics; Molecular Networks; Neurons and Cognition; Other Quantitative Biology; Populations and Evolution; Quantitative Methods; Subcellular Processes; Tissues and Organs

Quantitative Finance

- Quantitative Finance (**q-fin** new, recent, find)
- Includes (see detailed description): Computational Finance; General Finance; Portfolio Management; Pricing of Securities; Risk Management; Statistical Finance; Trading and Market Microstructure

Statistics

- Statistics (**stat** new, recent, find)
- Includes (see detailed description): Applications; Computation; Machine Learning; Methodology; Other Statistics; Statistics Theory

About arXiv

- See our [help pages](#) including [submission details](#).
- Mirrors and other articles.
- RSS feeds are available for individual archives and categories.
- Trackback support (view recent).
- Today's usage for arXiv.org (not including mirrors)
- General information and arXiv Scientific Advisory Board
- Background chart, including invited talk at UNESCO HQ (Paris, 21 Feb '96), update Sep '96

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Contact



what is the “*arXiv*”? (cont.)

- in many fields of mathematics and physics, almost all scientific papers are **self-archived** on the arXiv
- on October 3, 2008, arXiv.org passed the **half-million** article milestone
- the preprint archive started August **1991**



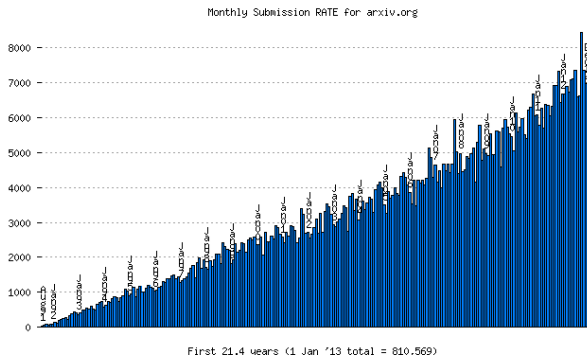
what is the “arXiv”? (cont.)

- arXiv was originally hosted at the Los Alamos National Laboratory (USA) and called the LANL preprint archive (xxx.lanl.gov)
- today it is hosted and operated by **Cornell University** (USA)
- it changed its name and address to arXiv.org in 1999 for greater flexibility (arxiv.org)

what is the “arXiv”? (cont.)

- a **majority** of the e-prints are also submitted to journals for publication, but some work, including some very influential papers, remain purely as e-prints and are never published in a peer-reviewed journal
- by 2012 the submission rate has grown to more than **7000 per month**

arXiv monthly submission rate statistics



Blue - Number of new submissions received during each month since Aug '91

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