

THE UNIVERSITY OF CONNECTICUT

Biography, Bibliography and Professional Summary
of
Juha Javanainen, Professor, Department of Physics

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BIRTHDATE: 06/03/54

BIRTHPLACE: Kokemäki, Finland

EDUCATION:

1977

M. Sc.

Helsinki University of Technology

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Dr. Sc.

Helsinki University of Technology

EXPERIENCE:

09/91 -

Professor, University Connecticut

09/87 - 08/91

Associate Professor, University of Connecticut

01/86 - 08/87

Senior Research Associate, University of Rochester

01/85 - 12/85

Max-Planck-Stipendiat, Max-Planck- Institut für

Quantenoptik, Garching, Germany

04/82 - 12/84

Senior Research Associate, University of Helsinki

04/81 - 03/82

Civil service in lieu of Finnish military service

08/78 - 03/81

Research Associate, University of Helsinki

06/76 - 07/78

Teaching and research assistant, Helsinki

University of Technology and Academy of Finland

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Associate Professor, Helsinki University of Technology

PROFESSIONAL SOCIETIES:

Fellow, American Physical Society

Member, Connecticut Academy of Science and Engineering

FIELD OF SPECIALIZATION:

quantum optics theory: Bose-Einstein condensation, light
pressure, multiphoton ionization, quantum measurement
theory

A. Regular journal contributions

- A.1 S. Stenholm and J. Javanainen, "Velocity redistribution by standing waves", Appl. Phys. **16**, 159-166 (1978).
- A.2 J. Javanainen and S. Stenholm, "Broad band resonant light pressure I. Basic equations", Appl. Phys. **21**, 35-45 (1980).
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- A.5 J. Javanainen and S. Stenholm, "Laser cooling of trapped particles I: The heavy particle limit", Appl. Phys. **21**, 283-291 (1980).
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- A.11 J. Javanainen, "Light-induced motion of trapped ions I: Low-intensity limit", J. Phys. B **14**, 2519-2534 (1981).
- A.12 J. Javanainen, "Light-induced motion of trapped ions II: Arbitrary intensity", J. Phys. B **14**, 4191-4205 (1981).
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- A.19 M. Kaivola, N. Bjerre, O. Poulsen, and J. Javanainen, "Observation of population trapping in a two-photon resonant three-level atom", *Optics Commun.* **49**, 418-422 (1984).
- A.20 J. Javanainen, "A class of soluble models for bound-free transitions", *Physica Scripta* **31**, 57-62 (1985).
- A.21 J. Javanainen, "Light-induced motion of trapped ions III: Expansion around the recoilless solution", *J. Phys. B* **18**, 1549-1568 (1985).
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- A.23 J. Javanainen, P. Helistö, E. Ikonen, and T. Katila, "Failure of the classical field model of Mössbauer spectroscopy", *Phys. Rev. Lett.* **55**, 2063-2066 (1985).
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- A.42 J.H. Eberly, Q. Su, and J. Javanainen, "Nonlinear light scattering accompanying multiphoton ionization", *Phys. Rev. Lett.* **62**, 881-884 (1989).
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- A.99 S. Varro and J. Javanainen, “Gauge-independent quantum dynamics on phase-space of charged scalar particles”, *Fortschr. Phys.* **51**, 236-241 (2003).
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- A.113 J. Javanainen, M. Kostrun, M. Mackie, and A. Carmichael, “Simple Mean-Field Theory for a Zero-Temperature Fermionic Gas at a Feshbach Resonance”, *Phys. Rev. Lett.* **95**, 110408 (4 pages) (2005).
- A.113 J. Javanainen and J. Ruostekoski, “Symbolic calculation in development of algorithms: split-step methods for the Gross–Pitaevskii equation”, *J. Phys. A* **39**, L179-L184 (2006).
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B. Other major publications

- B.1 J. Javanainen, "Studies of resonance-light pressure", thesis for the degree of Doctor of Technology (1981). Distributed by Helsinki University of Technology.
- B.2 J. Javanainen, "Theory of resonance-light pressure", invited lectures at the IX Summer School on Quantum Optics, Cetniewo, Poland, September 1-8, 1981; *Acta Physica Polonica* **A61**, 271-283 (1982).
- B.3 J. Javanainen, "Light pressure cooling of a trapped three-level ion", invited talk at Seminar on Fundamentals of Laser Interactions, Obergurgl, Austria, February 24 - March 2, 1985; in "Fundamentals of Laser Interactions", ed. F. Ehlotzky, Lecture Notes in Physics **229**, 249-258 (Springer, Heidelberg, 1985).
- B.4 P. Filipowicz, J. Javanainen, and P. Meystre, "Why is laser light coherent? Photon statistics in coherently driven resonators"; in "Coherence, Cooperation and Fluctuations", eds. F. Haake, L.M. Narducci and D.F. Walls (Cambridge University Press, Cambridge, 1986), pp. 206-219.
- B.5 P. Filipowicz, J. Javanainen, and P. Meystre, "The ultimate maser", invited lectures given by P. Meystre at the VI International School on Coherent Optics, Ustron, Poland, September 19-26, 1985; in "Quantum Optics", eds. A. Kujawski and M. Lewenstein, Proceedings of Conferences in Physics Vol. **7** (Polish Academy of Sciences, Institute of Physics, 1986), pp. 47-54.
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