

Curriculum Vitae

Iavor Veltchev, Ph.D.

CONTACT INFORMATION

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EDUCATION AND SUMMARY OF QUALIFICATIONS

- Medical Physics Residency**
2010 Fox Chase Cancer Center, Department of Radiation Oncology
Supervisor: Charlie Ma, Ph.D. (c_ma@fccc.edu)
- Ph.D. in Physics**
June 2001 School: Vrije Universiteit Amsterdam, The Netherlands
Subject: Optical, Atomic and Laser Physics
Thesis title: "Stimulated Brillouin scattering pulse compression and high-order harmonic generation: applications to precision XUV laser spectroscopy"
- M.Ss. in Physics and Dipl. Engineer**
July 1994 School: Sofia University, Faculty of Physics, Department of Quantum Electronics
Subject: Quantum Electronics and Laser Technologies
Thesis title: "Numerical modeling and experimental investigation of the generation and evolution of dark spatial solitons"

PROFESSIONAL EXPERIENCE / CAREER HISTORY

- | | |
|------------------------|---|
| June 2010 – present | Fox Chase Cancer Center, Radiation Oncology Department
Position: Assistant Professor/Medical Physicist
Project: Proton and heavy ion dosimetry
Clinical implementation of Monte Carlo dose calculations |
| Aug 2008 – June 2010 | Fox Chase Cancer Center, Radiation Oncology Department
Position: Medical Physics Resident
Project: Proton and heavy ion dosimetry
Clinical implementation of Monte Carlo dose calculations |
| April 2004 – July 2008 | Fox Chase Cancer Center, Laser Center
Position: Associate Member/Project Leader
Project: Laser proton acceleration
High-intensity laser-matter interactions |
| Oct 2001 – Mar 2004 | Lehigh University, Fiber Optics Group
Position: Postdoctoral
Project: Distributed Raman amplification and competing nonlinearities in optical fibers |

June 2001 – Sept 2001	<p>Vrije Universiteit, Amsterdam, Atomic Physics Group Position: Postdoctoral Project: Development of tunable narrow-band extreme ultraviolet (XUV) laser source</p>
Feb 1997 – June 2001	<p>Vrije Universiteit, Amsterdam, Atomic Physics Group Position: PhD-student Project: Development of tunable narrow-band soft-X-ray laser source; Precision frequency calibration; VUV laser spectroscopy.</p>
Oct 1996 – Dec 1996	<p>Vrije Universiteit, Amsterdam, Atomic Physics Group Position: Visiting physicist Project: Pulse compression by stimulated Brillouin scattering</p>
March 1996 – May 1996	<p>Sofia University, Faculty of Physics Position: Research physicist Project: Multiply-charged optical vortex solitons</p>
March 1995 – March 1996	<p>Conscription leave</p>
Sept 1994 - March 1995	<p>Sofia University, Faculty of Physics Position: Research physicist Project: Interactions of optical vortex solitons</p>
Sept 1994 - March 1995	<p>Sofia University, Faculty of Physics Position: Undergraduate research student Project: Theoretical and experimental investigation of dark spatial solitons</p>

PROFESSIONAL AFFILIATION AND CONTRIBUTIONS

2008 – present Member of the American Association of Physicists in Medicine (AAPM).
2003 – present Member of the Optical Society of America (OSA).
1999 – present Member of the Union of Physicists in Bulgaria / European Physical Society.

- **Active referee** for the following peer-reviewed journals:
Physical Review Letters, Physical Review A, Physical Review E,
Optics Letters, Optics Communications, Photonics Technology Letters,
Journal of Lightwave Technology, Optics Express,
Medical Physics, Journal of Applied Clinical Medical Physics.
- **More than 30 publications** in peer-reviewed journals

AWARDS AND GRANTS

- Young Investigator Award - First prize
December 2009 AAPM (Delaware Valley Chapter)
- An European Union grant for access to Large-scale Laser Facilities
March 2000 Lund Institute of Technology, Lund, Sweden
- An award for best master thesis work
July 1994 Sofia University, Dept. Quantum Electronics
- Third prize at 20th International Physics Olympiad
July 1989 Warsaw, Poland

TEACHING EXPERIENCE

- Radiation Physics Lecture Series for Radiation Oncology Residents
2004–2011 Fox Chase Cancer Center, Department of Radiation Oncology
- Instructor, Introduction to Monte Carlo Treatment Planning
2005–2011 Fox Chase Cancer Center, Department of Radiation Oncology
- Modern Optics (Graduate Course, Adjunct Professor)
Fall 2009 Lehigh University, Department of Physics
- Ph.D. Thesis co-advisor, Lehigh University, Department of Physics
2004–2008 Yan Yan
“Propagation of Light in Linear and Nonlinear Regime in Multicore Photonic Crystal Fibers”
- Ph.D. Thesis co-advisor, Lehigh University, Department of Physics
2008–2011 Cyril L. Guinrand
“Raman-Assisted Optical Parametric Amplification in Optical Fibers”

INVITED PRESENTATIONS

- Lehigh University Colloquium (October 22, 2009) “Acceleration of Protons with Ultra-Intense Laser Pulses: Applications in Cancer Therapy”
- Fox Chase Cancer Center (September 25, 2003) “Powerful laser sources for extreme laser-matter interactions”
- Lehigh University Colloquium (October 26, 2001) “Pulse compression by Stimulated Brillouin scattering in liquids”

RESEARCH INTERESTS

- Medical Physics:
Clinical applications of Monte Carlo dose calculation techniques.
Applications of protons and heavy ions in radiation therapy.
Applications of nanoparticles and radio-sensitizers in radiation therapy.
Photodynamic therapy.
Intensity modulated proton and carbon ion therapy.
Radiobiological efficiency of heavy ions.
Shielding of Heavy Ion Radiation Therapy Facilities.
IGRT and target localization techniques
- Laser-matter interactions:
relativistic laser-plasma interactions.
laser driven ion acceleration. clinical applications of laser-accelerated particles.
- Nonlinear optics:
beam/pulse propagation through nonlinear media.
nonlinear fiber optics.
pulse compression by stimulated Brillouin scattering.
high-harmonic generation.
dark spatio-temporal solitons.
optical vortices.
- Development of laser systems:
ring-cavity lasers (dye, solid-state).
powerful amplifiers (dye, solid-state).

- Laser spectroscopy:
precision frequency calibration in the visible.
VUV spectroscopy of noble gases.
VUV spectroscopy of diatomic molecules.
- Numerical modeling of nonlinear processes.
- Optical communications: optical fiber communications.
high bit-rate and high-average power transmission analysis.

OTHER SKILLS

- Radiation therapy equipment
Linacs: Varian (Clinac iX, Trilogy, 21EX), Siemens (Primus, Artiste)
Dosimetry: Ion chambers, Profiler (Sun Nuclear), MatriXX (IBA), Film, TLD, MOSFET
PTW water scanner, protocols (TG21, TG25, TG51)
R&V: Mosaiq
- Computers
platforms: PC, workstations (SUN, IBM)
operating systems: UNIX/Linux, DOS/Windows
languages: C++, FORTRAN, Pascal, HTML, LaTeX, Maple, dBase, Basic
Monte Carlo Codes: FLUKA2008, Geant4, EGS4, McSim
web-page design and maintenance
diverse hardware knowledge
- Commercial laser systems operation
Nd:YAG nanosecond: Quanta Ray GCR series (3,4,5 330-10)
CW solid state: Millennia (Spectra Physics), Verdi (Coherent)
Pulsed solid state: Evolution (Coherent), Inlite (Continuum)
Dye lasers: Spectra Physics ring-laser, PDL
Ti:sapphire CW ring-laser: Coherent 699
Ti:sapphire mode-locked: MIRA-900 (both femto- and pico-second)
Ti:sapphire regenerative amplifier: Legend UPS (Coherent)
Ar-ion laser: Coherent Sabre

LANGUAGES

English fluent
Russian proficient oral and written
Dutch basic knowledge
Bulgarian mother tongue

List of Publications

Iavor Veltchev, Ph.D.

Theses

- June 2001, Ph.D. thesis from Vrije Universiteit, Amsterdam, The Netherlands
“Stimulated Brillouin Scattering pulse compression and harmonic generation: Applications to precision XUV laser spectroscopy”
- July 1994, M.Sc. thesis from Sofia University, Bulgaria
“Numerical modeling and experimental investigation of the generation and evolution of dark spatial solitons”

Journal Articles (peer reviewed)

1. “Absolute dose reconstruction in proton therapy using PET imaging modality: feasibility study”
E. Fourkal, J. Fan, **I. Veltchev**
Physics in Medicine and Biology *54* (11), N217–N228 (2009).
2. “Energy and information flow in superlensing ”
E. Fourkal, **I. Velchev**, and A. Smolyakov
Phys. Rev. A *79* (3), 033846 (2009).
3. “Laser-to-proton energy transfer efficiency in laser-plasma interactions”
E. Fourkal, **I. Velchev**, and C.-M. Ma
J. Plasma Phys. *75*, 235–250 (2009).
4. “Decoupling and asymmetric coupling in triple-core photonic crystal fibers”
Y. Yan, J. Toulouse, **I. Velchev**, and S. Rotkin
J. Opt. Soc. Am B, **25** (9), 1488–1495 (2008).
5. “Shielding design for a laser-accelerated proton therapy system”
J. Fan, W. Luo, E. Fourkal, T. Lin, J. Li, **I. Velchev**, N. E. Ipe, and C.-M. Ma
Physics in Medicine and Biology, **52** (13), 3913–3930 (2007).
6. “Laser induced Coulomb mirror effect: applications for proton acceleration”
I. Velchev, E. Fourkal, and C.-M. Ma
Physics of Plasmas **14** (3) 33106 (2007).
7. “Energy optimization procedure for treatment planning with laser-accelerated protons”
E. Fourkal, **I. Velchev**, J. Fan, W. Luo, and C.-M. Ma
Medical Physics **34** (2), 577–584 (2007).
8. “Resonant transparency of opaque materials”
E. Fourkal, **I. Velchev**, and A. Smolyakov
Physics Letters A **361**, 277–282 (2007).
9. “Creation of tailored features by laser heating of Nd_{0.2}La_{0.8}BGeO₅ glass”
P. Gupta, H. Jain, D.B. Williams, J. Toulouse, and **I. Veltchev**
Optical Materials **29** (4), 355–359 (2006).
10. “Development of a laser-driven proton accelerator for cancer therapy”
C.-M. Ma, **I. Velchev**, E. Fourkal, J. S. Li, W. Luo, J. Fan, and A. Pollack
Laser Physics **16** (4), 1–8 (2006).
11. “Evanescent wave interference and the total transparency of a warm high-density plasma slab”
E. Fourkal, **I. Velchev**, A. Smolyakov, and C.-M. Ma
Physics of Plasmas **13** (9), 092113 (2006).

12. “Coulomb explosion effect and the maximum energy of protons accelerated by high-power lasers”
E. Fourkal, **I. Velchev**, and C.-M. Ma
Physical Review E **71** (3), 036412 (2005).
13. “Statistical properties of the Stokes signal in stimulated Brillouin scattering pulse compressors”
I. Velchev and W. Ubachs
Physical Review A **71** (4), 043810 (2005).
14. “Two-beam modulation instability in noninstantaneous nonlinear media”
I. Velchev, R. Pattnaik, and J. Toulouse
Physical Review Letters **91**, 093905 (2003).
15. “Fourier analysis of the spectral properties of multi-mode laser radiation”
I. Velchev and J. Toulouse
The American Journal of Physics **71** (3), 269–272 (2003).
16. “A novel narrow-band wavelength-tunable laser system delivering high-energy 300 ps pulses in the near-infrared”
F. Brandi, **I. Velchev**, D. Neshev, W. Hogervorst, and W. Ubachs
Review of Scientific Instruments **74** (1), 32–37 (2003).
17. “Higher order stimulated Brillouin scattering with non-diffracting beams”
I. Velchev and W. Ubachs
Optics Letters **26** (8), 530–532 (2001).
18. “Vacuum-ultraviolet spectroscopy of Xe: Hyperfine splittings, isotope shifts, and isotope-dependent ionization energies”
F. Brandi, **I. Velchev**, W. Hogervorst, and W. Ubachs
Physical Review A **64** (3), 032505 (2001).
19. “Lifetime measurements on the $c'_4 \ ^1\Sigma_u^+$, $v=0, 1$, and 2 states of molecular nitrogen”
W. Ubachs, R. Lang, **I. Velchev**, W. -U. L. Tchang-Brillet, A. Johansson, Z. S. Li, V. Likhnygin, and C. -G. Wahlstrom
Chemical Physics **270** (1), 215–225 (2001).
20. “Isotope dependent predissociation in the $C \ ^1\Sigma^+$, $v=0$ and $v=1$ states in CO”
P. Cacciani, F. Brandi, **I. Velchev**, C. Lynga, C. -G. Wahlstrom, and W. Ubachs
The European Physics Journal **D15** (1), 47–56 (2001).
21. “Predissociation in the $E \ ^1\Pi$, $v=1$ state of the six natural isotopomers of CO”
W. Ubachs, **I. Velchev**, and P. Cacciani
Journal of Chemical Physics **113** (2), 547–560 (2000).
22. “Predissociation of $b \ ^1\Pi_u$, v ($v=1,4,5,6$) levels of N_2 ”
W. Ubachs, **I. Velchev**, and A. de Lange
Journal of Chemical Physics **112** (13), 5711–5716 (2000).
23. “Pulse compression to the sub-phonon lifetime region by half-cycle gain in transient stimulated Brillouin scattering”
I. Velchev, D. Neshev, W. Hogervorst, W. Ubachs
IEEE Journal of Quantum Electronics **QE-35** (12), 1812–1816 (1999).
24. “Precision VUV spectroscopy of argon I at 105 nm”
I. Velchev, W. Hogervorst, W. Ubachs
Journal of Physics **B32** (17), L511–L516 (1999).
25. “Steering of one-dimensional odd dark beams of finite length”
A. Dreischuh, G. G. Paulus, F. Zacher, **I. Velchev**
Applied Physics **B69** (2), 113–117 (1999).

26. “SBS pulse compression to 200 ps in a compact single-cell setup”
D. Neshev, **I. Veltchev**, W. A. Majewski, W. Hogervorst, and W. Ubachs
Applied Physics **B68** (4), 671–675 (1999).
27. “A dense grid of reference Iodine lines for optical frequency calibration in the range 571–596nm”
I. Veltchev, R. van Dierendonck, W. Hogervorst, and W. Ubachs
Journal of Molecular Spectroscopy **187** (1), 21–27 (1998).
28. “Multiple-charged optical vortex solitons in bulk Kerr media”
I. Veltchev, A. Dreischuh, D. Neshev, S. Dinev
Optics Communications **140** (1–3), 77–82 (1997).
29. “Interaction of optical vortex solitons superimposed on different background beams”
I. Veltchev, A. Dreischuh, D. Neshev, and S. Dinev
Optics Communications **130** (4–6), 385–392 (1996).
30. “Phase measurements of ring dark solitons”
A. Dreischuh, W. Fliesser, **I. Veltchev**, S. Dinev, and L. Windholz
Applied Physics **B62** (2), 139–142 (1996).
31. “Generation and evolution of two-dimensional dark spatial solitons”
S. Baluschev, A. Dreischuh, **I. Veltchev**, S. Dinev, and O. Marazov
Physical Review E **52** (5), 5517–5523 (1995).
32. “Odd and even two-dimensional dark spatial solitons”
S. Baluschev, A. Dreischuh, **I. Veltchev**, S. Dinev, and O. Marazov
Applied Physics **B61** (1), 121–124 (1995).

Proceedings

- “Topological-charge controlled interaction within ordered structures of optical vortex solitons”
M. Assa, **I. Veltchev**, D. Neshev, A. Dreischuh, and S. Dinev
Proceedings SPIE **3502**, 218–222 (1997).
- “Two-dimensional dark spatial solitons”
A. Dreischuh, S. Baluschev, **I. Veltchev**, D. Neshev, S. Dinev, and O. Marazov
Proceedings of VIII School on Quantum Electronics, Lasers, and Applications 327–332 (1996)
M. Nenchev, P. Atanasov, and M. Himber (eds.), University Paris-Nord, Paris.

Oral Presentations at Conferences

1. “Fast RBE-Corrected Dose Calculation for Carbon Therapy”
I. Veltchev, E. Fourkal, J. Fan, J. Li, and C.-M. Ma
American Association of Physicists in Medicine (AAPM2010) [**talk**].
2. “Acceleration of Protons with Ultra-Intense Laser Pulses: Applications in Cancer Therapy”
I. Veltchev, A. Guemnie Tafo, T. Lin, E. Fourkal, J. Fan, J. Li, C.-M. Ma
Radiation Service Engineers’ Association, Educational program (AAPM2010) [**invited talk**]
3. “Acceleration of Protons by High-Contrast Ultra-Intense Laser Pulses”
I. Veltchev, A. Guemnie Tafo, T. Lin, E. Fourkal, J. Fan, J. Li, C.-M. Ma
American Association of Physicists in Medicine (AAPM2009) [**talk**].
4. “Optimizing the Laser Parameters in a Simulated Laser-Proton Accelerator”
I. Veltchev, E. Fourkal, and C.-M. Ma
American Association of Physicists in Medicine (AAPM2008) [**talk**].

5. “Chain acceleration of protons using high-power laser pulses”
I. Veltchev, E. Fourkal, and C.-M. Ma
American Association of Physicists in Medicine (AAPM2007) [**talk**].
6. “Beam of laser-accelerated protons: generation and characterization”
I. Veltchev, T. Lin, E. Fourkal, J. Fan, J. Li, C.-M. Ma, S. Orimo, and K. Ogura
American Association of Physicists in Medicine (AAPM2007) [**talk**].
7. “A laser system and target design for proton acceleration”
I. Veltchev, E. Fourkal, T. Lin, and C.-M. Ma
American Association of Physicists in Medicine (AAPM2006) [**talk**].
8. “Directional coupling and switching in multi-core microstructure fibers”
I. Veltchev and J. Toulouse
Conference on Lasers and Electro-Optics (CLEO) pp.997–999 (2004) [**talk**].
9. “Precision VUV laser spectroscopy on Ar, Kr and Xe”
I. Veltchev, F. Brandi, W. Hogervorst, and W. Ubachs
International Quantum Electronics Conference (IQEC) p.77 (2000) [**talk**].

Other Presentations at Conferences

1. “Neutron Production in Novel Heavy Ion Accelerators”
I. Veltchev, S. Koren, C.-M. Ma
American Association of Physicists in Medicine (AAPM2010) [**poster**].
2. “Linear Energy Transfer of Proton Clusters”
E. Fourkal, **I. Veltchev**, C.-M. Ma
American Association of Physicists in Medicine (AAPM2010) [**oral poster**].
3. “Ion Chamber Dosimetry Modification under Strong Magnetic Field Conditions”
S. Koren, R. Price, A. Guemnie-Tafo, **I. Veltchev**, E. Fourkal, C.-M. Ma
American Association of Physicists in Medicine (AAPM2010) [**talk**].
4. “Proton SOBP Reconstruction for LowDensity Media and Divergent Beams”
A. Guemnie Tafo, E. Fourkal, **I. Veltchev**, C.-M. Ma
American Association of Physicists in Medicine (AAPM2010) [**poster**].
5. “Evaluation of the Effect of the Head Holder Base Plate on Head/Neck RapidArc Plans”
L. Wang, **I. Veltchev**, J. Fan, L. Jin, R. Price, C.-M. Ma
American Association of Physicists in Medicine (AAPM2010) [**poster**].
6. “Electron Beam Dose Modification Using Transverse MRILinac B Fields; A ShieldingDelivery Investigation”
S. Koren, E. Fourkal, A. Guemnie-Tafo, **I. Veltchev**, C.-M. Ma
American Association of Physicists in Medicine (AAPM2010) [**poster**].
7. “A Track Repeating Algorithm for Carbon Therapy Dose Calculation”
I. Veltchev, J. Fan, J. Li, C.-M. Ma
American Association of Physicists in Medicine (AAPM2009) [**poster**].
8. “Comparison of Prostate Rotation and Calypso Beam Rotation for Prostate Margin Evaluation”
Q. Xu, J. Li, G. Shan, **I. Veltchev**, I. Emam, J. Fan, T. Lin, L. Jin, L. Chen, C.-M. Ma
American Association of Physicists in Medicine (AAPM2009) [**oral poster**].
9. “Photothermal Cancer Therapy Using Gold Nanorods”
E. Fourkal, **I. Veltchev**, A. Guemnie-Tafo, C.-M. Ma, V. Khazak, and N. Skobeleva
American Association of Physicists in Medicine (AAPM2009) [**poster**].

10. “The Effect of Lung Heterogeneity and Respiration On Proton Therapy Treatment Margins”
A. Guemnie Tafo, **I. Veltchev**, J. Li, J. Fan, E. Fourkal, C.-M. Ma
American Association of Physicists in Medicine (AAPM2009) [**poster**].
11. “Density Scaling of the Proton Energy Spectrum for Analytic Reconstruction of the SOBP”
A. Guemnie Tafo, E. Fourkal, **I. Veltchev**, C.-M. Ma
American Association of Physicists in Medicine (AAPM2009) [**poster**].
12. “Polarization Dependence of Inter-Core Coupling in Multi-Core Photonic Crystal Fibers”
Y. Yan, J. Toulouse, **I. Veltchev**, S. Rotkin
Frontiers In Optics, Rochester 2008 [**talk**].
13. “Laser-To-Proton Energy Transfer Efficiency in Laser-Plasma Interactions”
E. Fourkal, **I. Veltchev**, and C.-M. Ma
American Association of Physicists in Medicine (AAPM2008) [**talk**].
14. “Improved Proton Yield From a Laser-Proton Accelerator”
I. Veltchev, A. Guemnie Tafo, T. Lin, E. Fourkal, J. Fan, J. Li, C.-M. Ma, S. Orimo, and K. Ogura
American Association of Physicists in Medicine (AAPM2008) [**poster**].
15. “Cellular Radiosensitivity of Laser Accelerated Protons: A Feasibility Study”
J. Fan, E. Fourkal, A. Guemnie Tafo, **I. Veltchev**, J. Li, Q. Xu, T. Lin, L. Wang, K. Paskalev, L. Jin,
and C.-M. Ma
American Association of Physicists in Medicine (AAPM2008) [**poster**].
16. “Laser-Proton Inter-Track Effect and the DNA Double-Strand Break ”
J. Fan, E. Fourkal, A. Guemnie Tafo, **I. Veltchev**, R. Price Jr., W. Luo, J. Li, A. Eldib, L. Chen, and
C.-M. Ma
American Association of Physicists in Medicine (AAPM2008) [**poster**].
17. “A Laser-Ion Accelerator for Radiation Therapy Application”
C.-M. Ma, E. Fourkal, **I. Veltchev**, J. Li, J. Fan, T. Lin, A. Guemnie Tafo
American Association of Physicists in Medicine (AAPM2008) [**poster**].
18. “Absolute Dose Reconstruction in Proton Therapy Using PET Imaging Modality: Feasibility Study”
E. Fourkal, J. Fan, K. Paskalev, C.-M. Ma, and **I. Veltchev**
American Association of Physicists in Medicine (AAPM2007) [**talk**].
19. “LaserProton Acceleration for Radiation Therapy”
C.-M. Ma, **I. Veltchev**, T. Lin, E. Fourkal, J. Li, J. Fan, S. Orimo, and K. Ogura
American Association of Physicists in Medicine (AAPM2007) [**talk**].
20. “Prepulse effect and maximum energy of protons accelerated by high-power lasers”
E. Fourkal, **I. Veltchev**, T. Lin, and C.-M. Ma
American Association of Physicists in Medicine (AAPM2006) [**talk**].
21. “Laser-accelerated proton therapy: Target chamber design and shielding requirements”
C.-M. Ma, **I. Veltchev**, E. Fourkal, J. Li, J. Fan, T. Lin, W. Luo, and S. Stathakis
American Association of Physicists in Medicine (AAPM2006) [**talk**].
22. “Analytical calculation of spread-out-Bragg-peak distributions for laser-accelerated proton beams”
E. Fourkal, **I. Veltchev**, J. Fan, J. Li, W. Luo, and C.-M. Ma
American Association of Physicists in Medicine (AAPM2005) [**poster**].
23. “A laser-proton accelerator for radiation oncology: System design”
C.-M. Ma, E. Fourkal, **I. Veltchev**, W. Luo, and A. Pollack
American Association of Physicists in Medicine (AAPM2004) [**talk**].

24. “Heavy-ion dynamics in the acceleration of protons by the interaction of high-power lasers with double-layer targets”
E. Fourkal, **I. Velchev**, and C.-M. Ma
Quantum Electronics and Laser Science Conference (QELS) pp.1822–1824 (2005). [**poster**].
25. “A novel narrow-band wavelength-tunable laser system delivering high-energy 300 ps pulses in the near-infrared”
F. Brandi, **I. Velchev**, D. Neshev, W. Hogervorst, and W. Ubachs
Symposium IEEE/LEOS Benelux Chapter, Amsterdam, The Netherlands (9 December 2002) [**talk**].
26. “Modulation instability induced by cross-phase modulation in Raman fiber amplifiers”
R. Pattnaik, **I. Velchev**, J. Toulouse
Conference on Lasers and Electro-Optics (CLEO) pp.535–536 (2002) [**poster**].
27. “Narrow-band XUV laser source”
F. Brandi, D. Neshev, **I. Velchev**, W. Hogervorst, and W. Ubachs
IQEC/LAT, Moscow, Russia, (22–28 June 2002) [**poster**].
28. “Dense grid of reference I₂-lines for optical frequency calibration in the range 571-655 nm”
W. Ubachs, **I. Velchev**, S.-C. Xu, R. van Dierendonck, and W. Hogervorst
International Quantum Electronics Conference (IQEC) p.92 (2000) [**poster**].
29. “Narrowband coherent Soft-X-ray laser source”
I. Velchev, W. Hogervorst, and W. Ubachs
ESF workshop on applications of high-order harmonics, Lund, Sweden, (March 17–18 2000) [**poster**].
30. “SBS-compressed FT-limited laser pulses tunable in wavelength and duration (200-2000 ps)”
D. Neshev, **I. Velchev**, S. Schiemann, W. Hogervorst, and W. Ubachs
Conference on Lasers and Electro-Optics Europe (CLEO-Europe) p.54 (1998) [**talk**].
31. “Detailed investigation of stimulated Brillouin scattering compression in liquids with one-cell compact generator-amplifier setup”
D. Neshev, **I. Velchev**, W. Majewski, W. Hogervorst, and W. Ubachs
Tenth International School on Quantum Electronics, Varna, Bulgaria, (21–25 Sept 1998) [**poster**].
32. “Topological Charge Controlled Interaction within Ordered Structures of Optical Vortex Solitons”
M. Assa, **I. Velchev**, S. Dinev, D. Neshev, and A. Dreischuh,
Nineth International School of Quantum Electronics, Varna, Bulgaria (16–20 Sept 1996) [**poster**].
33. “Two-Dimensional Dark Solitons: Formation and Interactions”
A. Dreischuh, S. Balushev, **I. Velchev**, D. Neshev, and S. Dinev,
Eight International School of Quantum Electronics, Varna, Bulgaria (29 Sept – 4 Oct 1994) [**poster**].
34. “Numerical Modeling of Generation and Interactions of Dark Optical Solitons”
A. Dreischuh, **I. Velchev**, D. Neshev, and S. Dinev
First Symposium on Nonlinear Phenomena and Solitons, Sofia, Bulgaria (21–22 June 1994) [**talk**].