List of publications

Iavor Veltchev, Ph.D, DABR
Associate Professor, Medical Physicist

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. "Evaluating Suggested Stricter Gamma Criteria for Linac-based Patient-specific Delivery QA in the Conventional and SBRT Environments"
   R. Price **I. Veltchev**, T. Lin, A. Eldib, L. Jin, L. Chen X. Chen, J. Liu, L. Wang, and C.-M. Ma
   Physica Medica **100**, 72 – 80 (2022).

2. "Practical Clinical Implementation of the Special Physics Consultation Process in the Re-irradiation Environment"
   R. Price, L. Jin, J. Meyer, L. Chen, T. Lin, A. Eldib, X. Chen, J. Liu, **I. Veltchev**, L. Wang, and C.-M. Ma
   Adv. Rad. Onc. **6** (1), 100594 (2021).

3. "Application of a directional palladium-103 brachytherapy device on a curved surface"
   I. Veltchev, R. Price, X. Chen, K. Howell, J. Meyer, and C.-M. Ma
   Medical Physics **46** (4), 1905 – 1913 (2019).

4. "Robotic radiosurgery system patient-specific QA for extracranial treatments using the planar ion chamber array and the cylindrical diode array"
   M. Lin, **I. Veltchev**, S. Koren, C.-M. Ma, and J. Li
   Journal of Applied Clinical Medical Physics **16** (4), 5486 (2015).

5. "Planning target volume-to-skin proximity for head-and-neck intensity modulated radiation therapy treatment planning"
   R. Price, S. Koren, **I. Veltchev**, M. Hossain, M. Lin, T. Galloway, P. Flanagan, J. Haber, and C.-M. Ma
   Practical Oncology **4**, e21 – e29 (2014).

6. "3D inpatient dose reconstruction from the PET-CT imaging of ^{90}Y microspheres for metastatic cancer to the liver: Feasibility study"
   E. Fourkal, **I. Veltchev**, M. Lin, S. Koren, J. Meyer, M. Doss, and J. Yu
   Medical Physics **40** (8), 081702 (2013).

7. "Measurement comparison and Monte Carlo analysis for volumetric-modulated arc therapy (VMAT) delivery verification using the ArcCHECK dosimetry system"
   M. Lin, S. Koren, **I. Veltchev**, L. Li, L. Wang, R. Price, and C.-M. Ma
   Journal of Applied Clinical Medical Physics **14** (2), 220–233 (2013).

8. "Linear energy transfer of proton clusters"
   E. Fourkal, **I. Veltchev**, C.-M. Ma, and J. Fan
   Physics in Medicine and Biology **56** (10), 3123–3136 (2011).

9. "Absolute dose reconstruction in proton therapy using PET imaging modality: feasibility study"
   E. Fourkal, J. Fan, and **I. Veltchev**
   Physics in Medicine and Biology **54** (11), N217–N228 (2009).

10. "Energy and information flow in superlensing "
    E. Fourkal, **I. Velchev**, and A. Smolyakov
    Phys. Rev. A **79** (3), 033846 (2009).

11. "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).

12. "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).

13. "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).

14. "Laser induced Coulomb mirror effect: applications for proton acceleration"
    I. Velchev, E. Fourkal, and C.-M. Ma
    Physics of Plasmas **14** (3) 33106 (2007).

15. "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).

16. "Resonant transparency of opaque materials"
    E. Fourkal, **I. Velchev**, and A. Smolyakov
    Physics Letters A **361**, 277–282 (2007).

17. "Creation of tailored features by laser heating of $Nd_{0.2}La_{0.8}BGeO_5$ glass"
    P. Gupta, H. Jain, D.B. Williams, J. Toulouse, and **I. Veltchev**
    Optical Materials **29** (4), 355–359 (2006).

18. "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).

19. "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).

20. "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).

21. "Statistical properties of the Stokes signal in stimulated Brillouin scattering pulse compressors"
    I. Velchev and W. Ubachs
    Physical Review A **71** (4), 043810 (2005).

22. "Two-beam modulation instability in noninstantaneous nonlinear media"
    I. Velchev, R. Pattnaik, and J. Toulouse
    Physical Review Letters **91**, 093905 (2003).

23. "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).

24. "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).

25. "Higher order stimulated Brillouin scattering with non-diffracting beams"
I. Velchev and W. Ubachs
Optics Letters **26** (8), 530–532 (2001).

26. "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).

27. "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. Lokhnygin, and C. -G. Wahlstrom
Chemical Physics **270** (1), 215–225 (2001).

28. "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).

29. "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).

30. "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).

31. "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).

32. "Precision VUV spectroscopy of argon I at 105 nm"
I. Velchev, W. Hogervorst, W. Ubachs
Journal of Physics **B32** (17), L511–L516 (1999).

33. "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).

34. "SBS pulse compression to 200 ps in a compact single-cell setup"
D. Neshev, **I. Velchev**, W. A. Majewski, W. Hogervorst, and W. Ubachs
Applied Physics **B68** (4), 671–675 (1999).

35. "A dense grid of reference Iodine lines for optical frequency calibration in the range 571–596nm"
I. Velchev, R. van Dierendonck, W. Hogervorst, and W. Ubachs
Journal of Molecular Spectroscopy **187** (1), 21–27 (1998).

36. "Multiple-charged optical vortex solitons in bulk Kerr media"
I. Velchev, A. Dreischuh, D, Neshev, S. Dinev
Optics Communications **140** (1–3), 77–82 (1997).

37. "Interaction of optical vortex solitons superimposed on different background beams"
I. Velchev, A. Dreischuh, D. Neshev, and S. Dinev
Optics Communications **130** (4–6), 385–392 (1996).

38. "Phase measurements of ring dark solitons"
A. Dreischuh, W. Fliesser, **I. Velchev**, S. Dinev, and L. Windholz
Applied Physics **B62** (2), 139–142 (1996).

39. "Generation and evolution of two-dimensional dark spatial solitons"
S. Baluschev, A. Dreischuh, **I. Velchev**, S. Dinev, and O. Marazov
Physical Review E **52** (5), 5517–5523 (1995).

40. "Odd and even two-dimensional dark spatial solitons"
S. Baluschev, A. Dreischuh, **I. Velchev**, S. Dinev, and O. Marazov
Applied Physics **B61** (1), 121–124 (1995).

Proceedings

- "Applications of laser-accelerated particle beams for radiation therapy"
C.-M. Ma, E. Fourkal, J. S. Li, **I. Veltchev**, W. Luo, J. J. Fan, T. Lin, and A. Tafo
Proceedings SPIE **8079**, 80791B (2011).

- "Topological-charge controlled interaction within ordered structures of optical vortex solitons"
M. Assa, **I. Velchev**, D. Neshev, A. Dreischuh, and S. Dinev
Proceedings SPIE **3502**, 218–222 (1997).

- "Two-dimensional dark spatial solitons"
A. Dreischuh, S. Baluschev, **I. Velchev**, 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. "Accurate Post-implantation Dose Reconstruction of Civa-sheet, Aided by Machine Learning Techniques"
I. Veltchev, R. Price , X. Chen , K. Howell , J. Meyer , and C.-M. Ma
American Association of Physicists in Medicine (AAPM2020) [**talk**].

2. "Planning of CivaSheet LDR treatments"
I. Veltchev
AAPM Spring Clinical Meeting (March 2019) [**invited talk**].

3. "Application of Civa-sheet on Curved Surfaces"
I. Veltchev, R. Price , X. Chen , K. Howell , J. Meyer , and C.-M. Ma
American Association of Physicists in Medicine (AAPM2018) [**talk**].

4. "Particle Therapy: Applications and Challenges"
I. Veltchev
Radiation Oncology Conference for Nurses, Therapists and Dosimetrists (October 27, 2017) [**invited talk**].

5. "Source Migration Following Radio-Embolization with Yttrium-90 Microspheres"
I. Veltchev, M. Doss, J. Yu, J. Meyer, and C.-M. Ma
American Association of Physicists in Medicine (AAPM2017) [**talk**].

6. "Physical Aspects and Clinical Applications of Post-Treatment Yttrium-90 PET-Based Dosimetry"
I. Veltchev, E. Fourkal, M. Doss, J. Yu, J. Meyer, and C.-M. Ma
American Association of Physicists in Medicine (AAPM2015) [**talk**].

7. "Applications of Photonuclear Activation of Biological Tissues in Clinical High-energy X-ray Beams"
   I. Veltchev, E. Fourkal, and C.-M. Ma
   American Association of Physicists in Medicine (AAPM2014) [**talk**].

8. "Per-Frame Analysis of MatriXX Data"
   I. Veltchev, R. Price, and C.-M. Ma
   American Association of Physicists in Medicine (AAPM2012) [**talk**].

9. "On the Increased RBE of Proton Clusters"
   I. Veltchev, E. Fourkal, and C.-M. Ma
   American Association of Physicists in Medicine (AAPM2011) [**talk**].

10. "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**].

11. "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**]

12. "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**].

13. "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**].

14. "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**].

15. "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**].

16. "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**].

17. "Directional coupling and switching in multi-core microstructure fibers"
    I. Velchev and J. Toulouse
    Conference on Lasers and Electro-Optics (CLEO) pp.997–999 (2004) [**talk**].

18. "Precision VUV laser spectroscopy on Ar, Kr and Xe"
    I. Velchev, F. Brandi, W. Hogervorst, and W. Ubachs
    International Quantum Electronics Conference (IQEC) p.77 (2000) [**talk**].

Other Presentations at Conferences

1. "Dosimetrc Evaluation of Rectal Hydrogel Spacer in Prostate HDR Treatments"
   I. Veltchev, T. Lin, x. Chen, C. Lee, T. Dougherty, J. Wong, M. Hallman, E. Horwitz, R. Price, and C.-M. Ma
   American Association of Physicists in Medicine (AAPM2021) [**e-poster**]

2. "A Systematic Study On the Angular Dependence of 2D Ion Chamber Array for Accurate IMRT Plan Quality Assurance"
   J. Xu, J. Liu, **I. Veltchev**, and C.-M. Ma
   American Association of Physicists in Medicine (AAPM2020) [**e-poster**].

3. "A Monte Carlo Investigation of Dose Reporting Issue in the Presence of High Hounsfield-Unit Material in Clinical AAA Dose Calculation Algorithm"
   X. Chen, J. Fan, **I. Veltchev**, J. Li, J. Liu, Ma
   American Association of Physicists in Medicine (AAPM2020) [**e-poster**].

4. "Dosimetric Characterization of a Low Energy Directional LDR Brachytherapy Source"
   I. Veltchev, X. Chen, R. Price, and C.-M. Ma
   American Association of Physicists in Medicine (AAPM2019) [**e-poster**].

5. "Prospective Study Evaluating Liver Radioembolization Dose With PET and Disease Response"
   V. Avkshtol, **I. Veltchev**, M. Doss, J. Yu, G. Cohen, J. Panaro, C. Denlinger, J. Anaokar, E. Handorf, A. Anderson, J. Paly, and J. Meyer
   American Radium Society (ARS2019) [**talk**].

6. "The Effect of CT Metal Artifact Reduction (MAR) On Spine SBRT Dose Calculation: A Monte Carlo Study"
   X. Chen, J. Fan, **I. Veltchev**, J. Li, and C.-M. Ma
   American Association of Physicists in Medicine (AAPM2019) [**e-poster**].

7. "Determination of Proper Measurement Plane for 2D IMRT QA"
   J. Panetta, **I. Veltchev**, R. Price, and C.-M. Ma
   American Association of Physicists in Medicine (AAPM2019) [**e-poster**].

8. "The Feasibility of Clinical Implementation of AAPM TG-218 IMRT Measurement-Based Tolerance Limit Recommendations"
   R. Price, **I. Veltchev**, T. Lin, A. Eldib, and C.-M. Ma
   American Association of Physicists in Medicine (AAPM2019) [**e-poster**].

9. "Measuring Liver Radioembolization Dose With Positron Emission Tomography"
   V. Avkshtol, **I. Veltchev**, J. Anaokar, J. Paly, J. Yu, M. Doss, G. Cohen, J. Panaro, C. Denlinger, E. Handorf, A. Anderson, G. Williams, E. Fourkal, and J. Meyer
   American Society for Clinical Oncology (GI-ASCO2019) [**poster**].

10. "Investigation of the Dosimetric Accuracy for OSLD In-Vivo Measurements of Total Body Irradiation"
    A. Eldib, T. Lin, **I. Veltchev**, M. Hossain, R. Price, and C.-M. Ma
    American Association of Physicists in Medicine (AAPM2018) [**poster**].

11. "Evaluation of Dose Uncertainty for in Trans-Rectal Ultrasound (TRUS) -Based High-Dose-Rate Prostate Brachytherapy"
    J. Fan, **I. Veltchev**, T. Lin, O. Chibani, R. Price, and C.-M. Ma
    American Association of Physicists in Medicine (AAPM2017) [**poster**].

12. "Exploring the Dosimetric Advantage of a Novel Rotating Gamma Machine Equipped with Both MLC and Multiple Cone Colimators"
    A. Eldib, **I. Veltchev**, T. Lin, R. Price, G. Mora, m" Abdel Gawad, M. Sherif, and C.-M. Ma
    American Association of Physicists in Medicine (AAPM2017) [**poster**].

13. "Evaluation of 4D CT-On-Rails Target Localization Methods for Free Breathing Liver Stereotactic Body Radiotherapy (SBRT)"
    J. Fan, T. Lin, L. Jin, L. Chen, **I. Veltchev**, L. Wang, A. Eldib, B. Wang, Q. Xu, R. Price, and C.-M. Ma
    American Association of Physicists in Medicine (AAPM2016) [**talk**].

14. "Dosimetric Impact of the Dwell Position Inaccuracy in HDR Ring and Tandem Treatments with VarisourceIX Afterloader"
    I. Veltchev, R. Price, P. Anderson, and C.-M. Ma
    American Association of Physicists in Medicine (AAPM2016) [**poster**].

15. "Transition Form CT-Based to Ultrasound-Based HDR Treatment Planning for Prostate Cancer"
I. Veltchev, R. Price, E. Horwitz, and C.-M. Ma
American Association of Physicists in Medicine (AAPM2016) [**poster**].

16. "Monte Carlo Investigation of Sources of Dosimetric Discrepancies with 2D Arrays"
M. Afifi, N. Deiab, A. El-Farrash, A. Abd El-Hafez, A. Eldib, **I. Veltchev**, and C.-M. Ma
American Association of Physicists in Medicine (AAPM2016) [**poster**].

17. "Quasi-Dead Beams: Clinical Relevance and Implications for Automatic Planning"
R. Price, **I. Veltchev**, T. Lin, R. Gleason, and C.-M. Ma
American Association of Physicists in Medicine (AAPM2016) [**poster**].

18. "Dosimetric Evaluation of Non-Coplanar Arc Therapy Using a Novel Rotating Gamma Ray System"
A. Eldib, O. Chibani, G. Mora, L. Jin, J. Fan, J. Li, **I. Veltchev**, and C.-M. Ma
American Association of Physicists in Medicine (AAPM2016) [**poster**].

19. "On the Ion Beam Range and Dose Verification in Hadron Therapy Using Sound Waves"
E. Fourkal, **I. Veltchev**, O. Gayou, and V. Nahirnyak
American Association of Physicists in Medicine (AAPM2015) [**poster**].

20. "Investigation of Conformal Arc Therapy Utilizing Newly Designed Cobalt 60 Machine"
A. Eldib, O. Chibani, L. Jin, J. Li, **I. Veltchev**, R. Price, G. Mora, and C.-M. Ma
American Association of Physicists in Medicine (AAPM2015) [**talk**].

21. "First Experimental Verification of the Accuracy of Absolute Dose Reconstruction form PET-CT imaging of ^{90}Y Microspheres"
I. Veltchev, E. Fourkal, and C.-M. Ma
American Association of Physicists in Medicine (AAPM2014) [**poster**].

22. "4D Radiobiology"
E. Fourkal, M. Hossain, **I. Veltchev**, C.-M. Ma, J. Meyer, E. Horwitz, A. Nahum
American Association of Physicists in Medicine (AAPM2014) [**poster**].

23. "Fixed-Jaw Optimization for Critical Structure Sparing in IMRT Treatment Planning: Beam Modeling Cautions for Non-Routine Use"
R. Price, **I. Veltchev**, G. Cherian, and C.-M. Ma
American Association of Physicists in Medicine (AAPM2014) [**poster**].

24. "Beryllium Seeds Implant for Photo-Neutron Yield Using External Beam Therapy"
S. Koren, **I. Veltchev**, and E. Furhang
American Association of Physicists in Medicine (AAPM2014) [**poster**].

25. "Dose Delivery Accuracy of VMAT with Frequent Interruptions"
J. Li, **I. Veltchev**, R. Price, C.-M. Ma
Annual Meeting of the American-Society-for-Radiation-Oncology (ASTRO2014) [**poster**].

26. "Evening Output Check Improves Daily QA Reliability"
I. Veltchev, R. Price, C.-M. Ma
American Association of Physicists in Medicine (AAPM2013) [**poster**].

27. "Patient-Specific IMRT QA for Large Volume CyberKnife Plans Using MatriXX"
I. Veltchev, M. Lin, R. Price, C.-M. Ma
American Association of Physicists in Medicine (AAPM2013) [**poster**].

28. "A Novel Method for Dosimetry Calculation Utilizing PET-CT in Patients Treated with Radioembolization"
E. Fourkal, **I. Veltchev**, M. Lin, M. Johnson, C.-M. Ma, M. Doss, M. Yu, J. Meyer
American Association of Physicists in Medicine (AAPM2013) [**talk**].

29. "Modulation Severity as a Predictor for Patient-Specific IMRT QA Delivery Failure"
R. Price, **I. Veltchev**, C.-M. Mar
American Association of Physicists in Medicine (AAPM2013) [**talk**].

30. "Evaluation of the Planar Ion Chamber and the Cylindrical Diode Arrays for Extracranial Cyberknife Patient Specific QA"
M. Lin, **I. Veltchev**, J. Li, J. Fan, L. Jin, S. Koren, C.-M. Mar
American Association of Physicists in Medicine (AAPM2013) [**talk**].

31. "Procedure for Verification and Inter-Comparison of IMRT Beam Models"
I. Veltchev, E. Fourkal, R. Price, C.-M. Ma
American Association of Physicists in Medicine (AAPM2012) [**poster**].

32. "3D In-Patient Dose Reconstruction From the PET-CT Imaging of Y-90 Microspheres for Metastatic Cancer to the Liver"
E. Fourkal, **I. Veltchev**, S. Koren, M. Lin, C.-M. Ma, J. Meyer, M. Doss, M. Yu
American Association of Physicists in Medicine (AAPM2012) [**talk**].

33. "CyberKnife Patient Specific QA Using a 4D Cylindrical Diode Array System"
S. Koren, **I. Veltchev**, J. Fan, M. Lin, A. Tafo, C.-M. Ma
American Association of Physicists in Medicine (AAPM2012) [**talk**].

34. "PTV to Skin Proximity for Head and Neck IMRT Treatment Planning"
R. Price, S. Koren, M. Hossain, **I. Veltchev**, T. Galloway, P. Flanagan, C.-M. Ma
American Association of Physicists in Medicine (AAPM2012) [**poster**].

35. "3D Dose Measurements Using the Planned Dose Perturbation Technique (PDP) for the Evaluation of Head and Neck VMAT Treatment"
S. Koren, R. Price, **I. Veltchev**, M. Lin, J. Fan, C.-M. Ma
American Association of Physicists in Medicine (AAPM2012) [**poster**].

36. "Pairs of Sloped Spread-Out Bragg Peaks Improve Normal Tissue Sparing"
I. Veltchev, E. Fourkal, C.-M. Ma
American Association of Physicists in Medicine (AAPM2011) [**poster**].

37. "Plan-Specific Gamma Analysis Acceptance Criteria for Multi-Chamber Arrays"
R. Price, **I. Veltchev**, C.-M. Ma
American Association of Physicists in Medicine (AAPM2011) [**poster**].

38. "Tissue Inhomogeneity in Hadron Therapy"
E. Fourkal, **I. Veltchev**, M. Lin, C.-M. Ma
American Association of Physicists in Medicine (AAPM2011) [**poster**].

39. "Ion Chamber Dosimetry Modification Under Strong Magnetic Field Conditions; Air and Liquid Filled Chambers Study."
S. Koren, R. Price, A. Guemnie Tafo, **I. Veltchev**, E. Fourkal, C.-M. Ma
American Association of Physicists in Medicine (AAPM2011) [**poster**].

40. "Measurement Comparison and Monte Carlo Analysis for Rapid Arc Delivery Verification Using Arc-Check Dosimetry System"
S. Koren, M. Lin, **I. Veltchev**, C.-M. Ma
American Association of Physicists in Medicine (AAPM2011) [**poster**].

41. "A Broad Implementation of Treatment Planning System QA"
M. Hossain, R. Price, A. Guemnie Tafo, **I. Veltchev**, T. Lin, L. Wang, C.-M. Ma
American Association of Physicists in Medicine (AAPM2011) [**poster**].

42. "Neutron Production in Novel Heavy Ion Accelerators"
I. Veltchev, S. Koren, C.-M. Ma
American Association of Physicists in Medicine (AAPM2010) [**poster**].

43. "Linear Energy Transfer of Proton Clusters"
E. Fourkal, **I. Veltchev**, C.-M. Ma
American Association of Physicists in Medicine (AAPM2010) [**oral poster**].

44. "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**].

45. "Proton SOBP Reconstruction for Low-Density Media and Divergent Beams"
A. Guemnie Tafo, E. Fourkal, **I. Veltchev**, C.-M. Ma
American Association of Physicists in Medicine (AAPM2010) [**poster**].

46. "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**].

47. "Electron Beam Dose Modification Using Transverse MRI-Linac B Fields; A Shielding-Delivery Investigation"
S. Koren, E. Fourkal, A. Guemnie-Tafo, **I. Veltchev**, C.-M. Ma
American Association of Physicists in Medicine (AAPM2010) [**poster**].

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