



## Serdar Charyyev

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### Bio

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#### ACADEMIC APPOINTMENTS

- Clinical Assistant Professor, Radiation Oncology - Radiation Physics

### Publications

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#### PUBLICATIONS

- **Characterization of 250 MeV Protons from the Varian ProBeam PBS System for FLASH Radiation Therapy** *INTERNATIONAL JOURNAL OF PARTICLE THERAPY*  
Charyyev, S., Chang, C., Zhu, M., Lin, L., Langen, K., Dhabaan, A.  
2023
- **An Integrated Physical Optimization Framework for Proton Stereotactic Body Radiation Therapy FLASH Treatment Planning Allows Dose, Dose Rate, and Linear Energy Transfer Optimization Using Patient-Specific Ridge Filters.** *International journal of radiation oncology, biology, physics*  
Liu, R., Charyyev, S., Wahl, N., Liu, W., Kang, M., Zhou, J., Yang, X., Baltazar, F., Palkowitsch, M., Higgins, K., Dynan, W., Bradley, J., Lin, et al  
2023
- **A component method to delineate surgical spine implants for proton Monte Carlo dose calculation** *JOURNAL OF APPLIED CLINICAL MEDICAL PHYSICS*  
Chang, C., Charyyev, S., Harms, J., Slopsema, R., Wolf, J., Refai, D., Yoon, T., McDonald, M. W., Bradley, J. D., Leng, S., Zhou, J., Yang, X., Lin, et al  
2023; 24 (1): e13800
- **A potential revolution in cancer treatment: A topical review of FLASH radiotherapy** *JOURNAL OF APPLIED CLINICAL MEDICAL PHYSICS*  
Gao, Y., Liu, R., Chang, C., Charyyev, S., Zhou, J., Bradley, J. D., Liu, T., Yang, X.  
2022; 23 (10): e13790
- **An unsupervised patient-specific metal artifact reduction framework for proton therapy**  
Chang, C., Lei, Y., Charyyev, S., Leng, S., Yoon, T., Zhou, J., Yang, X., Lin, L., Linte, C. A., Siewerdsen, J. H.  
SPIE-INT SOC OPTICAL ENGINEERING.2022
- **A novel proton counting detector and method for the validation of tissue and implant material maps for Monte Carlo dose calculation** *PHYSICS IN MEDICINE AND BIOLOGY*  
Charyyev, S., Chang, C., Harms, J., Oancea, C., Yoon, S., Yang, X., Zhang, T., Zhou, J., Lin, L.  
2021; 66 (4): 045003
- **Learning-based synthetic dual energy CT imaging from single energy CT for stopping power ratio calculation in proton radiation therapy** *BRITISH JOURNAL OF RADIOLOGY*  
Charyyev, S., Wang, T., Lei, Y., Ghavidel, B., Beitler, J. J., McDonald, M., Curran, W. J., Liu, T., Zhou, J., Yang, X.  
2021; 95 (1129): 20210644
- **Synthetic Dual Energy CT Imaging from Single Energy CT Using Deep Attention Neural Network**  
Wang, T., Charyyev, S., Lei, Y., Ghavidel, B., Beitler, J. J., McDonald, M., Curran, W. J., Zhou, J., Liu, T., Yang, X., Bosmans, H., Zhao, W., Yu, et al  
SPIE-INT SOC OPTICAL ENGINEERING.2021

- **Accurate characterization of metal implants and human materials using novel proton counting detector for Monte Carlo dose calculation in proton therapy**  
Charyyev, S., Chang, C., Harms, J., Oancea, C., Yoon, S., Yang, X., Zhang, T., Zhou, J., Leng, S., Lin, L., Bosmans, H., Zhao, W., Yu, et al  
SPIE-INT SOC OPTICAL ENGINEERING.2021
- **Optimization of hexagonal-pattern minibeam for spatially fractionated radiotherapy using proton beam scanning** *MEDICAL PHYSICS*  
Charyyev, S., Artz, M., Szalkowski, G., Chang Chih-Wei, Stanforth, A., Lin Liyong, Zhang Rongxiao, Wang, C.  
2020; 47 (8): 3485-3495
- **High quality proton portal imaging using deep learning for proton radiation therapy: a phantom study** *BIOMEDICAL PHYSICS & ENGINEERING EXPRESS*  
Charyyev, S., Lei, Y., Harms, J., Eaton, B., McDonald, M., Curran, W. J., Liu, T., Zhou, J., Zhang, R., Yang, X.  
2020; 6 (3): 035029
- **ASSESSMENT OF AMBIENT NEUTRON DOSE EQUIVALENT IN SPATIALLY FRACTIONATED RADIOTHERAPY WITH PROTONS USING PHYSICAL COLLIMATORS** *RADIATION PROTECTION DOSIMETRY*  
Charyyev, S., Wang, C.  
2020; 189 (2): 190-197