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Birth date: 1974

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Education:

*Radiology Technology (BSc),1997, Shahid Beheshti University of Medical Sciences, **Tehran.***

*Medical Physics (MSc),1999, Isfahan University of Medical Sciences, **Isfahan.***

*Medical Physics (Ph.D.),2004, Tehran University of Medical Sciences, **Tehran.***

Msc thesis:

Evaluation of geometric accuracy of treatment fields by portal radiography in radiotherapy

Ph.D. thesis:

Experimental evaluation of Monte Carlo and analytical inhomogeneity correction methods in radiotherapy of thorax

Research interests:

1-Monte Carlo simulation of electron linear accelerators.

2-Monte Carlo dose calculations in radiotherapy.

- 3-*Experimal verification of treatment planning systems.*
 - 4- *Dosimetric optimization in intracavitary brachytherapy.*
 - 5- *Patient and staff dosimetry in interventional radiology.*
 - 6- *Application Monte Carlo method in shielding calculations of radiology and radiotherapy.*
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Teaching experiences:

I have been working in Medical Physics department of Tabriz university of Medical Sciences as an Assistant Professor since September 2004. I have taught these courses:

- 1- ***Medical Physics*** for medical and dentistry students: 4 academic years.
 - 2- ***Biophysics*** for pharmacy students: 4 academic years.
 - 3- ***General physics*** for Nutrition, Environmental health and physiotherapy students: 4 academic years.
 - 4- ***Health physics*** for Environmental health students: 4 academic years.
 - 5- ***Principles of X-ray Computed tomography and ultrasound*** for radiology residents and MSc students of Medical Physics : 2 academic years.
 - 6- ***Physics of radiology*** for MSc students of Medical Physics: 1 academic year.
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Clinical experiences:

1- *Research assistant: Oncology Physics Department, Western general hospital, Edinburgh, UK: 5 months. 2004.*

2-*Senior Radiotherapy Physicist: radiation oncology department of Tabriz university medical sciences: 5 years part time. from 2004.*

Domestic Publications in Persian:

1. ***Mesbahi A, Shokrani P. Determination of geometric accuracy in radiotherapy of head and neck and pelvis fields by portal radiography. Iranian J of Med. Phys. 2003;1:31-35.***

2. ***Allahverdi M, Mesbahi A, Attari M, Kazemian A, Geraati H. Evaluation of head holder effect on reduction of geometric errors in radiotherapy of head and neck fields in theradiotherapy department of IMAM hospital . Iranian J of Med. Phys. 2003;1(1):1-7.***

3. **Mesbahi A**, Mahdavi SR, Allahverdi M, Comparison of different computer speeds in calculating of ^{60}Co depth doses by MCNP4A and MCNP4B Monte Carlo codes. *Journal of Babol University of Medical Sciences*. 2004;6(3):7-11.

4. **Mesbahi A**, farajollahi AR, Oskoi G, Naseri AR. Comparison of prescribed dose and delivered dose to patients in radiotherapy department of Tabriz Imam-Khomeini hospital using invivo dosimetry. *Medical Journal of Tabriz University of Medical Sciences*.28(4).103-107.2007

5. **Mesbahi A**, Aslanabadi N, Mehnati P, Keshtkar A. Evaluation of patient radiation dose during angiography and angioplasty in angiography department of Shahid Madani hospital-Tbriz. *Iranian J of Med. Phys*. 2009. spring .6(1)53-59.

International Publications (in English):

1. **Mesbahi A**, Alizadeh G, Seyed-Oskoe G, Azarpeyvand A-. A new barite-colemanite concrete with lower neutron production in radiation therapy bunkers. *Ann Nucl Energy* [Internet]. 2013;51:107-11.

2. Ghiasi H, **Mesbahi A**. A new analytical formula for neutron capture gamma dose calculations in double-bend mazes in radiation therapy. *Reports of Practical Oncology and Radiotherapy* [Internet]. 2012;17(4):220-5.

3. Ghiasi H, **Mesbahi A**. Sensitization of the analytical methods for photoneutron calculations to the wall concrete composition in radiation therapy. *Radiat Measur* [Internet]. 2012;47(6):461-4.

4. **Mesbahi A**, Jafarzadeh V, Gharehaghaji N. Optical and NMR dose response of N-isopropylacrylamide normoxic polymer gel for radiation therapy dosimetry. *Reports of Practical Oncology and Radiotherapy* [Internet]. 2012;17(3):146-50.

5. Ghiasi H, **Mesbahi A**. Gantry orientation effect on the neutron and capture gamma ray dose equivalent at the maze entrance door in radiation therapy. *Nuclear Technology and Radiation Protection* [Internet]. 2012;27(1):70-4.

6. **Mesbahi A**, Azarpeyvand A-, Khosravi HR. Does concrete composition affect photoneutron production inside radiation therapy bunkers? *Japanese Journal of Radiology* [Internet]. 2012;30(2):162-6.

7. **Mesbahi A**, Azarpeyvand A-, Shirazi A. Photoneutron production and backscattering in high density concretes used for radiation therapy shielding. *Ann Nucl Energy* [Internet]. 2011;38(12):2752-6.

8. **Mesbahi A**, Ghiasi H, Rabee Mahdavi S. Photoneutron and capture gamma dose calculations for a radiotherapy room made of high density concrete. *Nuclear Technology and Radiation Protection* [Internet]. 2011;26(2):147-52.

9. Allahverdi M, Zabihzadeh M, Ay MR, Mahdavi SR, Shahriari M, **Mesbahi A**, Alijanzadeh H. Monte carlo estimation of electron contamination in a 18 MV clinical photon beam. Iranian Journal of Radiation Research [Internet]. 2011;9(1):15-28.
10. Ghiasi H, **Mesbahi A**. Monte carlo characterization of photoneutrons in the radiation therapy with high energy photons: A comparison between simplified and full monte carlo models. Iranian Journal of Radiation Research [Internet]. 2010;8(3):187-93.
11. Riabi HA, Mehnati P, **Mesbahi A**. Evaluation of mean glandular dose in a full-field digital mammography unit in tabriz, iran. Radiat Prot Dosimet [Internet]. 2010;142(2-4):222-7.
12. Ghavami S-, **Mesbahi A**, Pesianian I, Shafae A, Aliparasti M-. Normoxic polymer gel dosimetry using less toxic monomer of N-isopropyl acrylamide and X-ray computed tomography for radiation therapy applications. Reports of Practical Oncology and Radiotherapy [Internet]. 2010;15(6):172-5.
13. **Mesbahi A**. A review on gold nanoparticles radiosensitization effect in radiation therapy of cancer. Reports of Practical Oncology and Radiotherapy [Internet]. 2010;15(6):176-80.
14. Mohammadzadeh M, **Mesbahi A**. MC estimation of out-of-field organ doses from scattered photons, photoneutrons, and capture gamma rays in prostate radiation therapy. Nuclear Technology and Radiation Protection [Internet]. 2010;25(2):78-84.
15. Naseri A, **Mesbahi A**. A review on photoneutrons characteristics in radiation therapy with high-energy photon beams. Reports of Practical Oncology and Radiotherapy [Internet]. 2010;15(5):138-44.
16. **Mesbahi A**, Seyednejad F, Gasemi-Jangjoo A. Estimation of organs doses and radiation-induced secondary cancer risk from scattered photons for conventional radiation therapy of nasopharynx: A monte carlo study. Japanese Journal of Radiology [Internet]. 2010;28(5):398-403.
17. **Mesbahi A**, Ghiasi H, Mahdavi SR. Photoneutron and capture gamma dose equivalent for different room and maze layouts in radiation therapy. Radiat Prot Dosimet [Internet]. 2010;140(3):242-9.
18. **Mesbahi A**, Keshtkar A, Mohammadi E, Mohammadzadeh M. Effect of wedge filter and field size on photoneutron dose equivalent for an 18 MV photon beam of a medical linear accelerator. Applied Radiation and Isotopes [Internet]. 2010;68(1):84-9.
19. Keshtkar A, **Mesbahi A**, Rasta SH, Keshtkar A. The feasibility of computational modelling technique to detect the bladder cancer. Physica Medica [Internet]. 2010;26(1):34-7.
20. Pesianian I, **Mesbahi A**, Shafae A. Shielding evaluation of a typical radiography department: A comparison between NCRP reports no.49 and 147. Iranian Journal of Radiation Research [Internet]. 2009;6(4):183-8.

21. Naseri A, **Mesbahi A**. Application of monte carlo calculations for validation of a treatment planning system in high dose rate brachytherapy. Reports of Practical Oncology and Radiotherapy [Internet]. 2009;14(6):200-4.
22. Ghavami S-, **Mesbahi A**, Mohammadi E. The impact of automatic wedge filter on photoneutron and photon spectra of an 18-MV photon beam. Radiat Prot Dosimet [Internet]. 2009;138(2):123-8.
23. Zabihzadeh M, Ay MR, Allahverdi M, **Mesbahi A**, Mahdavi SR, Shahriari M. Monte carlo estimation of photoneutrons contamination from high-energy X-ray medical accelerators in treatment room and maze: A simplified model. Radiat Prot Dosimet [Internet]. 2009;135(1):21-32.
24. **Mesbahi A**. A monte carlo study on neutron and electron contamination of an unflattened 18-MV photon beam. Applied Radiation and Isotopes [Internet]. 2009;67(1):55-60.
25. **Mesbahi A**, Rouhani A. A study on the radiation dose of the orthopaedic surgeon and staff from a mini c-arm fluoroscopy unit. Radiat Prot Dosimet [Internet]. 2008;132(1):98-101.
26. **Mesbahi A**, Mehnati P, Keshtkar A, Aslanabadi N. Comparison of radiation dose to patient and staff for two interventional cardiology units: A phantom study. Radiat Prot Dosimet [Internet]. 2008;131(3):399-403.
27. **Mesbahi A**, Aslanabadi N. A study on patients' radiation doses from interventional cardiac procedures in tabriz, iran. Radiat Prot Dosimet [Internet]. 2008;132(4):375-80
28. **Mesbahi A**. The effect of electronic disequilibrium on the received dose by lung in small fields with photon beams: Measurements and monte carlo study. Iranian Journal of Radiation Research [Internet]. 2008;6(2):71-7.
29. **Mesbahi A**. Radial dose functions of GZP6 intracavitary brachytherapy ^{60}Co sources: Treatment planning system versus monte carlo calculations. Iranian Journal of Radiation Research [Internet]. 2008;5(4):181-6.
30. **Mesbahi A**, Aslanabadi N, Mehnati P. A study on the impact of operator experience on the patient radiation exposure in coronary angiography examinations. Radiat Prot Dosimet [Internet]. 2008;132(3):319-23.
31. Mahdavi SR, Shirazi A, Khodadadee A, Ghafoori M, Mesbahi A. The monte carlo simulation of the TLD response function: Scattered radiation field application. International Journal of Low Radiation [Internet]. 2008;5(2):124-33.
32. Keshtkar A, **Mesbahi A**, Mehnati P, Keshtkar A. Surface fluids effects on the bladder tissue characterisation using electrical impedance spectroscopy. Medical Engineering and Physics [Internet]. 2008;30(6):693-9.
33. **Mesbahi A**, Nejad FS. Monte carlo study on a flattening filter-free 18-MV photon beam of a medical linear accelerator. Radiation Medicine - Medical Imaging and Radiation Oncology [Internet]. 2008;26(6):331-6.
34. **Mesbahi A**, Naseri A. In-air calibration of new high dose rate ^{60}Co brachytherapy sources: Results of measurements on a GZP6 brachytherapy

afterloading unit. Reports of Practical Oncology and Radiotherapy [Internet]. 2008;13(2):69-73.

35. Keshtkar A, **Mesbahi A**, Mehnati P. The effect of bladder volume changes on the measured electrical impedance of the urothelium. International Journal of Biomedical Engineering and Technology [Internet]. 2008;1:287-92.

36. Shirazi A, Mahdavi SR, Khodadadee A, Ghaffory M, **Mesbahi A**. Monte carlo simulation of TLD response function: Scattered radiation field application. Reports of Practical Oncology and Radiotherapy [Internet]. 2008;13(1):23-8.

37. **Mesbahi A**, Nejad FS. Dose attenuation effect of hip prostheses in a 9-MV photon beam: Commercial treatment planning system versus monte carlo calculations. Radiation Medicine - Medical Imaging and Radiation Oncology [Internet]. 2007;25(10):529-35.

38. **Mesbahi A**, Naseri AR, Oskoi GH. Experimental evaluation of midline dose calculation methods in vivo dosimetry using anatomic thorax phantom. Iranian Journal of Radiation Research [Internet]. 2007;5(2):91-5.

39. **Mesbahi A**, Nejad FS. Monte carlo study on the impact of spinal fixation rods on dose distribution in photon beams. Reports of Practical Oncology and Radiotherapy [Internet]. 2007;12(5):261-6.

40. **Mesbahi A**. Dosimetric characteristics of unflattened 6 MV photon beams of a clinical linear accelerator: A monte carlo study. Applied Radiation and Isotopes [Internet]. 2007;65(9):1029-36.

41. **Mesbahi A**, Mehnati P, Keshtkar A, Farajollahi A. Dosimetric properties of a flattening filter-free 6-MV photon beam: A monte carlo study. Radiation Medicine - Medical Imaging and Radiation Oncology [Internet]. 2007;25(7):315-24.

42. **Mesbahi A**, Mehnati P, Keshtkar A. A comparative monte carlo study on 6MV photon beam characteristics of varian 21EX and elekta SL-25 linacs. Iranian Journal of Radiation Research [Internet]. 2007;5(1):23-30.

43. Mehnati P, Keshtkar A, **Mesbahi A**, Sasaki H. Track detection on the cells exposed to high LET heavy-ions by CR-39 plastic and terminal deoxynucleotidyl transferase (TdT). Iranian Journal of Radiation Research [Internet]. 2006;4(3):137-41.

44. **Mesbahi A**, Reilly AJ, Thwaites DI. Development and commissioning of a monte carlo photon beam model for varian clinac 2100EX linear accelerator. Applied Radiation and Isotopes [Internet]. 2006;64(6):656-62.

45. **Mesbahi A**. Development a simple point source model for elekta SL-25 linear accelerator using MCNP4C monte carlo code. Iranian Journal of Radiation Research [Internet]. 2006;4(1):7-14.

46. Farajollahi A, **Mesbahi A**. Monte carlo dose calculations for a 6-MV photon beam in a thorax phantom. Radiation Medicine - Medical Imaging and Radiation Oncology [Internet]. 2006;24(4):269-76.

47. **Mesbahi A**, Thwaites DI, Reilly AJ. Experimental and monte carlo evaluation of eclipse treatment planning system for lung dose calculations. Reports of Practical Oncology and Radiotherapy [Internet]. 2006;11(3):123-33.
48. **Mesbahi A**, Allahverdi M, Gheraati H. Monte carlo dose calculations in conventional thorax fields for 60Co photons. Radiation Medicine - Medical Imaging and Radiation Oncology [Internet]. 2005;23(5):341-50.
49. **Mesbahi A**, Fix M, Allahverdi M, Grein E, Garaati H. Monte carlo calculation of varian 2300C/D linac photon beam characteristics: A comparison between MCNP4C, GEANT3 and measurements. Applied Radiation and Isotopes [Internet]. 2005;62(3):469-77.
50. **Mesbahi A**, Allahverdi M, Gheraati H, Mohammadi E. Experimental evaluation of ALFARD treatment planning system for 6 MV photon irradiation: A lung case study. Reports of Practical Oncology and Radiotherapy [Internet]. 2004;9(6):217-21.