

AbstractID: 11206 Title: Adaptation of free software tool for radiotherapy treatment dose evaluation

Purpose: A free available software to verify conformal and IMRT radiotherapy treatments using radiochromic film dosimetry is proposed.

Method and Materials: The EBT radiochromic films are irradiated in slabs of solid water. In-house plugins for ImageJ (W. Rasband, NIH) are developed. Procedures to transfer dose planes from Philips Pinnacle v.8.0m to software applications are programmed. Specific plugins for combination scanning-EBT uniformity correction and automatic images processing are reported. The Radiotherapy QA plugin enables evaluation of absolute dose, relative dose distribution, gamma index, fast gamma index, dose differences and percent dose differences. Images selection for comparison are accessible by a friendly menu as well as the comparison criteria.

Results: We have tested the software using well known dose distribution and test images, and checking that the results of each possible comparisons parameters are correct.

Conclusion: We have adapted the free ImageJ software to an automatic and fast evaluation of two images dose differences. Those images could come from the planning system or from a radiochromic film allowing verification of the dose distribution in patients.