

AbstractID: 9710 Title: A Computer Program to Manage Dosimetry Data and to Verify Monitor Unit of Treatment Planning System

**Purpose:** For an independent procedure to verify monitor units (MU) calculated by treatment planning system (TPS), we developed a computer program, which shares the same beam database with TPS, and thus can be used to verify the accuracy and integrity of TPS. **Method and Materials:** The program can read and process raw ascii files directly from 3D water scanners. In addition, a customized txt file format was used to apply other parameters relevant to the program, such as scatter factors, wedge transmission factors, tray factors. To enhance the accuracy of calculations, the program considered off-axis ratios and wedge hardening effects that are often disregarded in routine hand calculations. Some correction algorithms were incorporated into the program to transform data of a certain measurement condition to those of the standard condition. The program can also automatically generate beam data as a format of dosimetry book, which can be often used for reference in clinic. **Results:** Because of the sharing beam database with TPS and automatic file based procedure, the program realized systematic management and periodic update of beam data to maintain the accuracy of TPS. **Conclusions:** It is expected that with this program, MU calculated from TPS can be independently verified and beam data of TPS can be systematically managed.