

Central-axis dose data are required directly or indirectly for dose calculations for all treatment planning algorithms. The quality assurance of these data, which is usually in the form of tables of PDD or TPR as a function of field size and depth, are essential to accurate dose delivery. A recently proposed 4-parameter functional representation for TPR in the domain of electronic equilibrium has been extensively tested for accuracy and robustness. Only nine measurements of TPR are sufficient to determine the four parameters of that functional representation. The TPR value of any depth and field size can then be reproduced to within 1% of measured data for photon energies 6 MV or greater. The representation is insensitive to random errors of measurement of a magnitude comparable to that expected in clinical practice. With only sparse sampling required for verification and calibration of teletherapy beams, the efficiency of guaranteeing quality of beam data can be greatly increased.