

Contents

	<i>Page</i>
1. Attenuation and energy absorption coefficients.....	1
1.1. Introduction.....	1
1.2. Physical constants; units; notation.....	2
1.2.1. Physical constants and conversion factors.....	2
1.2.2. Notation and units.....	3
1.3. Definition and significance of narrow-beam attenuation coefficient.....	5
1.4. Tabulation of attenuation coefficients.....	9
1.5. Definition and significance of energy-absorption coefficients and related quantities.....	9
1.5.1. Modes of energy transfer.....	9
1.5.2. Conditions under which the coefficients are useful.....	14
1.5.3. Evaluation of the coefficients from the cross sections.....	15
1.6. Tabulation of energy absorption coefficients.....	16
2. Photon cross sections.....	21
2.1. Scope.....	21
2.2. Classification of interactions.....	21
2.3. Atomic photoeffect (photoelectric absorption).....	24
2.4. Scattering.....	27
2.4.1. Compton scattering, Klein-Nishina formula.....	27
2.4.2. Electron binding corrections to Compton scattering, Rayleigh scattering.....	28
2.4.3. Radiative corrections. Double Compton effect.....	32
2.5. Electron-positron pair production.....	33
2.5.1. General discussion.....	33
2.5.2. Pair production in the field of the nucleus.....	33
2.5.3. Pair production in the field of an electron.....	37
2.6. Photonuclear absorption.....	39
3. Tabulation of cross sections for elements and compounds.....	40
4. References.....	78

