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Comments on ICRU Report No. 49: Stopping Powers and Ranges for Protons and Alpha Particles

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The International Commission on Radiation Units and Measurements (ICRU) published Report No. 49, Stopping Powers and Ranges for Protons and Alpha Particles, in 1993. Since the report shows only limited comparisons to experimental data, this Commentary discusses limits on the accuracy of its tables. Some of the stopping tabulations appear to have unusual variations for high energies (>1 MeV/nucleon) of the order of 2-4%, while the lower energies have possible errors of 10-20% for those targets which were not fitted with new data.

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Stopping power and range are then reported and compared with existing data. Then, a first application of TILDA-V to cellular irradiations is also reported in order to highlight the absolute necessity of taking into account a realistic description of the cellular environment in microdosimetry. View. Show abstract. General agreement compared to ICRU (>keV) [19,29] S-values Electron Simulations are statistically compatible with a selection of MC codes. Significant differences observed compared to MIRD recommendations. Track structure modeling in liquid water: A review of the Geant4-DNA Alpha rays, Protons, Charts, diagrams, Stopping power (Nuclear physics). There's no description for this book yet. Can you add one? Edition Notes. Includes bibliographical references (p. 258-279) and index. "Issued: 15 May 1993." Series. ICRU report ;, 49. Classifications. Dewey Decimal Class. 539.7/5. Library of Congress. RA1231.R2 I55 no. 49, QC793.5.P727S76 I55 no. 49. The Physical Object. Comments. Reading Challenge. Kindle Notes & Highlights. We'd love your help. Let us know what's wrong with this preview of Stopping Powers And Ranges For Protons And Alpha Particles by International Commission on Radiation Un. Problem: It's the wrong book It's the wrong edition Other. Details (if other): Cancel. Thanks for telling us about the problem. Return to Book Page. Not the book you're looking for? Reader Q&A. To ask other readers questions about Stopping Powers And Ranges For Protons And Alpha Particles, please sign up. Be the first to ask a question about Stopping Powers And Ranges For Protons And Alpha Particles. Lists with This Book. This book is not yet featured on Listopia. ► STOPPING POWERS AND RANGES FOR PROTONS AND ALPHA PARTICLES ICRU Report 49, 1993. ► CLINICAL PROTON DOSIMETRY PART I: BEAM PRODUCTION, BEAM DELIVERY AND MEASUREMENT OF ABSORBED DOSE ICRU Report 59, 1998. Workshop on Nuclear Data for Medical Applications, ICTP, 12 - 23 Nov 2007. Review of neutron and proton therapy. ICRU reports: Nuclear particle therapy (III). 5. ► NUCLEAR DATA FOR NEUTRON AND PROTON RADIOTHERAPY AND FOR RADIATION PROTECTION ICRU Report 63, 2000. ► STOPPING OF IONS HEAVIER THAN HELIUM ICRU Report 73, 2005. ► PRESCRIBING, RECORDING, AND REPORTING PROTON-BEAM THERAPY (Co-Chairs In nuclear and materials physics, stopping power is the retarding force acting on charged particles, typically alpha and beta particles, due to interaction with matter, resulting in loss of particle energy. Its application is important in areas such as radiation protection, ion implantation and nuclear medicine. Both charged and uncharged particles lose energy while passing through matter. Positive ions are considered in most cases below. The stopping power depends on the type and energy of the