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TUNL Nuclear Structure Data Evaluation on A = 2-20 Nuclides[1]

THINH TRUONG, Lenoir-Rhyne University, JOHN KELLEY, NC State University, GRACE SHEU, Duke University — Nuclear data represents measured or evaluated probabilities of various physical interactions involving the nuclei of atoms. The nuclear data group at Triangle Universities Nuclear Laboratory (TUNL) compiles, evaluates and disseminates nuclear structure data relevant to light nuclei in the mass region of A = 2 - 20. Our activities primarily involve surveying literature articles and producing recommended values for inclusion into various United States Nuclear Data Program databases, such as Experimental Unevaluated Nuclear Data List (XUNDL) and Evaluated Nuclear Structure Data File (ENSDF). We have projects related to analyzing beta-decay lifetimes, compiling structure data from recently published articles, and producing full nuclear structure data evaluations of nuclides based on all existing literature. The nuclear data disseminated is used for theoretical model development of nuclear physics and for applications involving radiation and nuclear power technologies.

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