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Nuclear States from Charged Particle Reactions

Subvolume B

Tables of Excitations from Reactions with Charged Particles

Part 3

$Z = 63 - 99$

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Preface

Nuclear level schemes and resonance parameters are of great interest for nuclear spectroscopy, for astrophysical models, thermonuclear calculations and for other applications. Parameters for nuclear levels of stable nuclei have been published in the Volumes I/16B, I/18A, B, C, and in I/19A1, A2. In the Volumes I/19A, B further data obtained from transfer reactions are presented. Volume I/19C contains the data of unstable nuclei far from the stability region which have been deduced from reactions other than transfer reactions (e.g. beta decay, spallation reactions, or inverse reactions). The data in these volumes should be considered as the most complete data collection for nuclear levels.

The contents of the various volumes can be characterized in the following way:

Data for unbound states (resonances)

I/16B, C	Low lying levels, neutron-induced resonances (I/16A contains general information on neutron physics)
I/19A	Highly excited levels above the low lying states, unbound states from charged-particle reactions (Z = 2 to 18 in I/19A1, Z = 19 to 83 in I/19A2)

Data for bound states (stable nuclei)

I/18A, B, C	Low lying levels (Z = 2 to 36 in I/18A, Z = 37 to 62 in I/18B, Z = 63 to 100 in I/18C) In I/18A the theoretical methods of treating nuclei are summarized, in particular those for deformed nuclei.
I/19B	Excited levels from charged-particle reactions (Z = 3 to 36 in I/19B1, Z = 37 to 62 in I/19B2, Z = 63 to 99 in I/19B3)

For the two Volumes I/18 and I/19B the distributions of the Z values to the respective subvolumes are the same. However, Volume I/19B contains data for many more isotopes than Volume I/18. In addition for some of the isotopes listed in Volume I/18 new data became available since its publishing and these have also been included in Volume I/19B, however, duplication of data was avoided.

Table 1 in Volume I/19B provides the number of levels registered for each isotope of the various volumes. This should make it easy for the user to find the data of the isotope he or she is looking for.

Data for unstable nuclei far from the stability line

I/19C	Excited levels for proton-rich and neutron-rich nuclei derived from reactions other than transfer reactions, e.g. beta-decay, spallation reactions or inverse reactions.

In agreement with the Publisher's general effort to make the data available to users by modern methods each subvolume is delivered with a CD ROM which contains all the data of the printed volume but in view of the large amount of data some of the information is given on the CD ROM only.

The compilation was as usual prepared by eminent experts in the fields. One of the characteristics of Landolt-Börnstein is that data are evaluated before they are accepted for the compilation. The idea is to present 'best values' which can be used with confidence by non-experts. Preparing such best values also implied making corrections necessary because of different energy calibrations in various publications.

I would like to thank the authors for their careful work and their flexibility to comply with the wishes of the editor and publisher. Thanks are also due to the members of the Landolt-Börnstein editorial staff who have made major contributions to the successful production of this volume.

Geneva, November 2006 **The Editor**

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