PREFACE

This is the Amendment 1 of the 7th Revision of the IAEA-INIS-2: Samples for Bibliographic Description which is available in electronic form only. This manual is a companion volume to IAEA-INIS-1(Rev.8,Amend.1, Dec.1999): Guide to Bibliographic Description, and reflects the changes to bibliographic and indexing rules since 1995.

Most samples were taken over from Revision 7 and contain all the parts required for submitting records to INIS, i.e. the bibliographic and indexing parts as well as the abstract. However, the comments following each sample relate mainly to aspects of the bibliographic description. In each case the sample is accompanied by a reproduction of the pertinent title page(s) or pages containing relevant information for the cataloguer.

The publication has three parts: the samples in first part have only one bibliographic level: the monographic; in the second part, the samples represented are journal articles with two bibliographic levels, analytic and serial, while in the third part the samples shown are multilevel records with corresponding "Lead Records".

The experience gained by INIS in almost thirty years of operation has shown that there is sometimes more than one way of cataloguing a piece of literature. The samples in this volume have been chosen to demonstrate the simplest and most concise way of cataloguing the documents without losing any important information.

The samples are presented in the FIBRE format as this software is widely used throughout the INIS community. Slight modifications and additions have been carried out to the original samples used earlier to be able to reflect the latest bibliographic rule changes. To assist users in identifying the names of the Tags, copies of the INIS worksheets are included at the end of the document as Attachments 1 and 2.

This publication has been revised by Ms. Seyda Rieder and prepared by Ms. Nora Dreihann-Holenia of the Bibliographic Control Unit of the INIS Section. Subject analysis matters have been reviewed by the Subject Control Unit. Any comments and suggestions for corrections concerning the content of this edition should be communicated to:

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Division of Scientific and Technical Information  
International Atomic Energy Agency  
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PART 1
Non-conventional measurement techniques for the determination of some long-lived radionuclides produced in nuclear fuel

Literature survey

R.J. Rosenberg (*)
Reactor Laboratory

(*) Author can be contacted via e-mail: rosenberg@xxxxx.fi
The results of a literature survey on non-radiometric analytical techniques for the determination of long-lived radionuclides are described. The methods which have been considered are accelerator mass spectrometry, inductively coupled plasma mass spectrometry, thermal ionization mass spectrometry, resonance ionization spectrometry, resonance ionization mass spectrometry and neutron activation analysis. Neutron activation analysis has been commonly used for the determination of $^{129}$I and $^{237}$Np in environmental samples. Inductively coupled mass spectrometry seems likely to become the method of choice for the determination of $^{99}$Tc, $^{237}$Np and Pu-isotopes. The methods are discussed and the chemical separation methods described. (author).
BIBLIOGRAPHY ON ELECTRON TRANSFER PROCESSES
IN ION-ION/ATOM/MOLECULE COLLISIONS

-UPDATED 1993-

H. Tawara

(Received April 1993)

NIFS-DATA-20

April 1993

National Institute for Fusion Science

Nagoya 464-01, Japan
800 BIBLIOGRAPHIES; COMPILED DATA; CHARGE EXCHANGE; ION-ATOM COLLISIONS; ION-ION COLLISIONS; ION-MOLECULE COLLISIONS; TOTAL CROSS SECTIONS

860 Following our previous compilations (IPPJ-AM-45 (1986), NIFS-DATA-7 (1990), bibliographic information on experimental and theoretical studies on electron transfer processes in ion-ion/atom/molecule collisions is updated. The references published through 1980-1992 are included. For easy finding references for particular combination of collision partners, a simple list is also provided. (author).

Note the following:

- Type of record: R (Report)
- Bibliographic level: M (Monographic)
- Literary indicators: N (Numerical data) and Z (Bibliography)

Thomas J. Wolery,
Stephanie A. Daveler

Work performed under the auspices of the U.S. Department of Energy by Lawrence Livermore National Laboratory under Contract W-7405-Eng-48.

LAWRENCE LIVERMORE NATIONAL LABORATORY
University of California • Livermore, California • 94550

DISTRIBUTION OF THIS DOCUMENT IS UNLIMITED
EQ6, a computer program for reaction path modeling of aqueous geochemical systems: Theoretical manual, user's guide, and related documentation (Version 7.0)

EQ6 is a FORTRAN computer program in the EQ3/6 software package (Wolery, 1979). It calculates reaction paths (chemical evolution) in reacting water-rock and water-rock-waste systems. Speciation in aqueous solution is an integral part of these calculations. EQ6 computes models of titration processes (including fluid mixing), irreversible reaction in closed systems, irreversible reaction in some simple kinds of open systems, and heating or cooling processes, as well as solve "single-point" thermodynamic equilibrium problems. A reaction path calculation normally involves a sequence of thermodynamic equilibrium calculations. Chemical evolution is driven by a set of irreversible reactions (i.e., reactions out of equilibrium) and/or changes in temperature and/or pressure. These irreversible reactions usually represent the dissolution or precipitation of minerals or other solids. The code computes the appearance and disappearance of phases in solubility equilibrium with the water. It finds the identities of these phases automatically. The user may specify which potential phases are allowed to form and which are not. There is an option to fix the fugacities of specified gas species, simulating contact with a large external reservoir. Rate laws for irreversible reactions may be either relative rates or actual rates. If any actual rates are used, the calculation has a time frame. Several forms for actual rate laws are programmed into the code. EQ6 is presently able to model both mineral dissolution and growth kinetics.

- Type of record: R (Report)
- Bibliographic level: M (Monographic)
- Literary indicator: V (Computer Program Description)

Note the following:
- In Tag 109: The full name of the Funding Organization has been entered here.
- In Tag 110: The full name of the Corporate Organization has been entered here.
- In Tag 610: The programming language has to be entered in this tag when literary indicator "V" is assigned.
- In Tag 611: Complete information about the availability of the program, software package is entered at this tag.
- In Tag 800: The subject descriptor "COMPUTER PROGRAM DOCUMENTATION" has to be entered when literary indicator "V" is assigned.
NUCLEAR PHYSICS DIVISION: ANNUAL REPORT 1991

Edited by
M.G. Bètigeri
Nuclear Physics Division

BHABHA ATOMIC RESEARCH CENTRE
BOMBAY, INDIA
1993
A brief account of the research and development activities carried out by the Nuclear Physics Division, Bhabha Atomic Research Centre, Bombay during the period January 1991 to December 1991 is presented. These R and D activities are reported under the headings: 1) Accelerator Facilities, 2) Research Activities, and 3) Instrumentation. At the end, a list of publications by the staff scientists of the Division is given. The list includes papers published in journals, papers presented at conferences, symposia etc., and technical reports. (author).

- Type of record: R (Report)
- Bibliographic level: M (Monographic)
- Literary indicator: Y (Progress Report)

Note the following:
- In Tag 100: The abbreviation "ed." has been entered to indicate the relationship of the responsible person.
- In Tag 800: The subject descriptor "PROGRESS REPORT" has to be entered when literary indicator "Y" is assigned.
DOE STANDARD

GUIDELINE TO GOOD PRACTICES FOR CONTROL AND CALIBRATION OF MEASURING AND TEST EQUIPMENT (M&TE) AT DOE NUCLEAR FACILITIES

U.S. Department of Energy
Washington, D.C. 20585

AREA MNTY

DISTRIBUTION STATEMENT A. Approved for public release; distribution is unlimited.
The purpose of the Guideline to Good Practices for Control and Calibration of Measuring and Test Equipment (M and TE) at DOE Nuclear Facilities is to provide contractor maintenance organizations with information that may be used for the development and implementation of a rigorously controlled maintenance program directed at controlling and calibrating M and TE used for maintenance tasks at DOE nuclear facilities. This document is intended to be an example guideline for the implementation of DOE Order 4330.4 A, Maintenance Management Program, Chapter II, Element 11, DOE contractors should not feel obligated to adopt all parts of this guide. Rather, they should use the information contained herein as a guide for developing an M and TE program applicable to their facility.
MEDIDAS DE PROBABILIDADES DE TRANSICION
EN EL MARGEN DEL ULTRAVIOLETA DE VACIO
AL INFRARROJO

Memoria que presenta
Mª Carmen Peraza Fernández
Para optar al grado de doctora en
Ciencias Físicas

Directores:
José Campos Gutiérrez
Catedrático de Física Atómica Experimental
Mª Piedad Martín Martínez
Investigadora del CIEMAT

Madrid 1992
In this thesis we describe the design, testing and calibration of different spectrometers to measure transition probabilities from the vacuum ultraviolet to the infrared spectral region. For the infrared measurements we have designed and performed a phase sensitive detection system, using an InGaAs photodiode-like detector. With this system we have determined the transition probabilities of infrared lines of KrI and XeI. For these lines we have not found previous measurements. In the vacuum ultraviolet spectral region we have designed a 3 m normal incidence monochromator where we have installed an optical multichannel analyzer. We have tested its accurate working, obtaining the absorption of KrI. In the visible region we have obtained the emission spectrum of Al using a hollow-cathode lamp and Nd: YAG laser produced Al plasma. With these spectra we have determined different atomic parameters like transition probabilities and electron temperature. (author).
Status of
Multilateral Arms Regulation
and Disarmament Agreements

Fourth Edition: 1992
Volume 2

United Nations Publication
Sales No. E.93.IX.11 (Vol. 2)

ISBN 92-1-142196-9
(Set: not to be sold separately)

Copyright © United Nations 1993
All rights reserved
Manufactured in the United States of America
The present publication, the fourth edition, reproduces in two volumes texts of agreements, in particular, those concerning nuclear disarmament and non-proliferation, and the status of those agreements as of 31 December 1992.

### Notes

- **Type of record**: B (Book)
- **Bibliographic level**: M (Monographic)
- **Literary indicator**: Q (Legislative Material)

**Note the following:**

- In Tag 200: The book is published in two volumes. The identification of the volume number is entered as part of the title.
- In Tag 800: The subject descriptor "LEGISLATIVE TEXT" has to be entered when literary indicator "Q" is assigned.
BREVET D'INVENTION

DISPOSITIF PORTEUR MOBILE POUR REALISER DES INTERVENTIONS DANS LA PARTIE SECONDAIRE D'UN GENERATEUR DE VAPEUR D'UN REACTEUR NUCLEAIRE A EAU SOUS PRESSION.

Date de dépôt : 07.10.91.
Priorité :

Demandeur(s) : SOCIETE DITE : FRAMATOME - FR.
Inventeur(s) : CACCIUTTOLA ANTOINE
Titulaire(s) :
Mandataire(s) : CABINET LAVOIX

Se reporter à la fin du présent fascicule.
The device has a central body having a first inflatable head and two jacks with an inflatable head at their extremities each. The legs of the jacks are oriented on both sides of the central body for displacement of the body by retraction and elongation of the legs.
The film documents the work of the radiation experts of 8 international organizations in the area around the damaged Chernobyl nuclear power plant. During this evaluation, radiation measurements and medical examinations of the population were carried out and samples of soil, water, plants and food taken.
This film documents the work of the radiation experts of eight international organizations in the area around the damaged Chernobyl nuclear power plant. During this evaluation, radiation measurements and medical examinations of the population were carried out and samples of soil, water, plants and food taken.

Note the following:

- In Tag 500: The physical description for films must provide sufficient information to indicate the requirements necessary to hear and/or view the film or tape.
Committed Equivalent Organ Doses and Committed Effective Doses
from Intakes of Radionuclides

NRPB has published a software package, NRPB-SR245, which contains the most recent data on doses per unit intake of radionuclides. The data incorporates the new ICRP recommendations on tissue weighting factors and current NRPB advice on gut transfer factors.

The software package lists the committed effective doses for ingestion and inhalation of 1 µm AMAD particles of 359 nuclides by infants aged 3 months, by children aged 1, 5, 10 and 15 years and by adults, together with the highest committed equivalent organ dose. This makes readily accessible the data given in NRPB-R245, and includes the complementary data given in NRPB-M288 and NRPB-M289, including the rate at which committed effective doses build up over time.

It is expected that the data here will be used generally for research purposes. Where the control of exposures is governed by specific legislation, then effective dose equivalent calculations will still need to use the ICRP Publication 26 tissue weighting factors.

The microcomputer program enables the user to select any required radionuclide and the program immediately gives the value of radiation dose and displays, prints or saves it to disk quickly and easily. It runs on any standard IBM PC, AT, XT or true compatibles with MS-DOS 2.0 or above. It can be installed on either a hard disk or twin floppy disk machine and runs on both colour and monochrome monitors. The software automatically detects if an arithmetic co-processor or MS-DOS compatible mouse is present and uses them if they are. The package includes a program for installing the software on another machine.

The software package is available from NRPB Information Services, price £50.00 + VAT. An order form is attached.

September 1992
Sample 10

001 GB9204035
008 S61/01/T/M

009 M
110 National Radiological Protection Board, Chilton (United Kingdom)
200 Committed equivalent organ doses and committed effective doses from intakes of radionuclides
310 NRPB-SR--245
403 1992
500 5 p.
600 (EN)
610 Software package
611 Available from NRPB, Chilton, Didcot, Oxon. OX11 ORQ, price Pound 50.00

009 9
800 S CODES; DOSE EQUIVALENTS; INGESTION; INHALATION; MAN; NRPB; ORGANS; RADIONUCLIDE KINETICS; RADIOISOTOPES

860 NRPB-SR245 is a software package which contains the most recent data on doses per unit intake of radionuclides. The data incorporate the new ICRP recommendations on tissue weighing factors and current NRPB advice on gut transfer factors. The software package lists the committed effective doses for ingestion and inhalation of 1 #mu#m AMAD particles of 359 nuclides by infants aged 3 months, by children aged 1, 5, 10 and 15 years and by adults, together with the highest committed equivalent organ dose.

- Type of record: T (Computer Medium)
- Bibliographic level: M (Monographic)

Note the following:

- In Tag 110: There is no personal author in the document, therefore, Tag 100 is omitted. The organization intellectually responsible for its publication is entered as corporate author in Tag 110 in free form.
- In Tag 310: The identification number of the software package, as mentioned in the abstract, is entered in this Tag.
- In Tag 611: The availability statement is not mandatory for Type of Record T, but it is highly recommended.
- In Tag 860: Note the encoded version of the Greek letter in the abstract.
PART 2
ELECTROMAGNETIC–ACOUSTIC CONVERSION OF BULK WAVES IN THE PARA-PROCESS REGION: II. FUNCTIONAL RELATIONS IN THE VICINITY OF THE CURIE POINT

R. S. Il'yasov and V. V. Merzlyakov

The anomalous behavior of electromagnetic–acoustic (EMA) conversion in the vicinity of the Curie point, where the EMA conversion efficiency increases abruptly, was discovered experimentally some time ago \( [1, 2] \). However, despite the pioneering nature of these and other similar studies and the subsequent practical application of their results \( [3] \), they were carried out for a limited class of experimental conditions and, in our opinion, have not been developed to the extent that they should in regard to exhibiting the physical substance of the phenomenon in its various manifestations. Noteworthy among theoretical studies is the work of Trigubovich and Domorod \( [4] \), but they also fall short of giving a complete description of the phenomenon, because they discuss only the temperature dependence of EMA conversion near the Curie point and derive expressions for the elastic displacements of a longitudinal wave propagating along the normal to the surface without any regard for surface forces.

We consider the configuration \( H_0 \perp q \parallel n \), where \( H_0 \) is the polarizing magnetic field, \( q \) is the wave vector, and \( n \) is the normal to the surface of the ferromagnet. The model of direct EMA conversion \( [5] \) for the elastic displacements of a longitudinal wave generated along the normal to the surface gives the equation

---


1061-8309/92/2809-0557$12.50 ©1993 Plenum Publishing Corporation
The contributions from the mechanisms of anisotropic magnetostriction and isotropic magnetostriction of the para-process to the electromagnetic-acoustic conversion of bulk waves excited both normal and at an angle relative to the surface of a ferromagnet are investigated theoretically and experimentally, along with the redistribution of these contributions as the temperature and magnetic field are varied. The characteristics of electromagnetic-acoustic conversion in the vicinity of the Curie point are analyzed in detail using a thermodynamic description of the magnetization processes near a second-order phase transition, and the limits of validity of the given approach are discussed. (author).
Fluid–structure coupling between a vibrating cylinder and a narrow annular flow

L. Perotin

Electricité de France (EDF) Research and Development Division, 6 Quai Watier, F-78400 Chatou, France

Abstract

This paper presents an analytical investigation of the fluid-elastic coupling between an axial annular flow and a flexible vibrating axisymmetric structure. The model presented is suited to single-phase, incompressible, viscous fluids and to annular flows of variable cross-section, axially symmetrical when the structure is motionless.

An experimental validation of this model is presented at the end of the paper: the results obtained with the numerical model are compared with experimental data for an oscillating cylinder free to vibrate under the effect of a variable-cross-section annular flow.
Fluid-structure coupling between a vibrating cylinder and a narrow annular flow

6. international topical meeting on nuclear reactor thermal hydraulics (Nureth-6)
Grenoble (France)
5-8 Oct 1993

500 p. 279
600 (English)

Nuclear Engineering and Design
ISSN 0029-5493
NEDEAU
403 (Sep 1994)
500 v. 149(1-3)

Full text: An analytical investigation of the fluidelastic coupling between an axial annular flow and a flexible vibrating axisymmetrical structure has been carried out. The model presented is suited to single-phase, incompressible, viscous fluids and to annular flows of variable cross-section, axially symmetrical when the structure is motionless. An experimental validation of this model is presented at the end of the paper: the results obtained with the numerical model are compared with experimental data for an oscillating cylinder free to vibrate under the effect of a variable-cross-section annular flow.

Note the following:
- In Tag 100 of Level A: The forename of the author has been entered in full.
- Tags 210, 211, and 213 have to be entered when literary indicator "K" is assigned.
- In Tag 500 of Level S: A space must be entered after the abbreviation 'v.', but no space is allowed between the number of the volume and the parentheses containing the issue number.
- In Tag 860: The full text of the abstract itself has been entered in this field following the rules established in 1997. Accordingly, if the length of the full text of the publication is less than 6000 characters and if it does not contain any tables or figures, the full text may be entered (in English) in Tag 860 following the wording Full text: unless forbidden by copyright restrictions. Alternatively, a shorter abstract should be prepared. For publications longer than 6000 characters, it is mandatory to provide an abstract.
PART 3
OCHRANA PŘI PRÁCI
SE ZDROJI
IONIZUJÍCÍHO ZÁŘENÍ

SBORNÍK UČEBNÍCH TEXTŮ

Dům techniky Ostrava, spol. a r.o.
Mariánské nám. 5, 709 29 Ostrava - Mariánské Hory
The publication has been set up as a textbook for training courses dealing with health protection during work with ionizing radiation, designed for supervisory staff and persons directly responsible for activities which involve the handling of ionizing radiation sources. The book consists of a preface and the following chapters: (1) Fundamentals of ionizing radiation physics; (2) Quantities and units used in ionizing radiation dosimetry; (4) Biological effects of ionizing radiation; (5) An overview of sources of public irradiation; (6) Principles and methods of health protection against ionizing radiation; (7) Examples of technical applications of sources of ionizing radiation; (8) Personnel and working environment monitoring; (9) Documentation maintained at sites with ionizing radiation sources; (10) Methods of personnel protection against external irradiation and internal radionuclide contamination; (11) Radiation incidents and accidents; (12) Health care of personnel exposed to the ionizing radiation risk; (13) Additional radiation protection requirements in handling radioactive substances other than sealed sources; (14) Measurement and metrology. (P.A.)

Note the following:
- This is the record of a conference proceedings described at the monographic level (M level). It describes the publication as a whole and is, therefore, the "LEAD RECORD". The analytics (records describing the individual chapters of this conference proceedings) have also been submitted and are shown on the next page. The subject descriptor "LEADING ABSTRACT" has also been assigned in Tag 800.
- Temporary Record Number (TRN) of the "LEAD RECORD" (in this case the TRN is CZ9626130) will be entered in Tag 007 of the analytics submitted from this conference proceedings (See sample 14).
Základy fyziky ionizujícího záření


Za ionizující záření pukládáme takové, které je schopno při průchodu prostředím způsobit jeho ionizaci, tj. vytvořit z původně elektricky neutrálních atomů volně elektrony a kladné lóny. Tuto vlastnost má například rentgenové záření nebo záření radioaktivních látek. Vznik absorpcí ionizujícího záření souvisí s strukturou atomů a atomových juder.

Stavba atomu
Atomy jsou nejmenší částice prvků, které se mohou účastnit chemických reakcí. Schématicky je stavba atomu a jeho jádra znázorněna na obrázku 1.

Obr. 1: Schématické znázornění atomu a atomového jádra

Atom je tvořen centrálním kladně nabitým jádrem a orbitálními elektrony, které se nacházejí na přesně upevzených dráhách. Atomové jádro obsahuje částice s kladným nábojem - protony a částice bez elektrického náboje - neutrony.
H. Kuzmany  M. Mehring  
J. Fink (Eds.)

Electronic Properties of High-\(T_c\) Superconductors

The Normal and the Superconducting State of High-\(T_c\) Materials

Proceedings of the International Winter School, Kirchberg, Tyrol, March 7–14, 1992

With 286 Figures

Springer-Verlag
Berlin  Heidelberg  New York
Electronic properties of high-Tc superconductors. The normal and the superconducting state of high-Tc materials. Proceedings

IWEPS '92: international winter school on electronic properties of high temperature superconductors

Kirchberg (Austria)

7-14 Mar 1992

ISBN 3-540-56195-1

Berlin (Germany)

Springer

1993

(EN)

Springer series in solid-state sciences

v. 113

ELECTRONIC STRUCTURE; FULLERENES; HIGH-TC SUPERCONDUCTORS; INELASTIC SCATTERING; LEADING ABSTRACT; MEETINGS; NEUTRON DIFFRACTION; NUCLEAR MAGNETIC RESONANCE; OPTICAL PROPERTIES; RAMAN SPECTROSCOPY; SUPERCONDUCTIVITY; EXPERIMENTAL DATA

The Kirchberg meetings are organized in the style of a school where experienced scientists from universities, research laboratories and industry discuss their most recent results, and when students and young scientists can learn about the present status of research and applications from eminent workers in their field. The present one focused on the electronic properties of the cuprate superconductors. Consideration was given to related compounds which are relevant to the understanding of the electronic structure of the cuprates in the normal state, to other oxide superconductors and to fulleride superconductors. Contributions dealing with their preparation, transport and thermal properties, high-energy spectroscopies, nuclear magnetic resonance, inelastic neutron scattering and optical spectroscopy are presented. 286 figs.

Note the following:
- Type of record: B (Book)
- Bibliographic levels: M (Monographic) and S (Serial)
- Literary indicator: K (Conference), N (Numerical data)

This is the record of a book described at the monographic level (M level) as a whole and is called the "LEAD RECORD". The individual chapters (i.e. conference papers) contained in this publication will be analyzed and submitted as separate records = "analytics". This book is published in a 'Series'. The series title and other information relevant to the series (eg. volume number) is entered at the serial level (S level).
- In Tag 100: The editors have different affiliations: the abbreviation "ed." is entered in parentheses after each editor's name, followed by the respective affiliation.
- In Tag 210: The conference has both a full and a short title. The short title is entered first, followed by a colon and a space and the full title of the conference.
- In Tag 800: The subject descriptor "LEADING ABSTRACT" is mandatory for the "LEAD RECORD". The subject descriptor "MEETINGS" is entered for a monograph and a lead record when literary indicator "K" is assigned. The document contains significant numerical data, therefore the descriptor “EXPERIMENTAL DATA” has been assigned (and the literary indicator N added in Tag 008).
One- and Two-Particle Excitations in Doped Mott-Hubbard Insulators

P. Horsch¹ and W. Stephan²

¹Max-Planck-Institut für Festkörperforschung,
Heisenbergstr. 1, W-7000 Stuttgart 80, Fed. Rep. of Germany
²King's College London, Strand, London WC2R 2LS, UK

Abstract. Recent analytical and numerical results for the single-particle spectral function and the optical conductivity of two-dimensional Hubbard and t-J models are reviewed. These models are considered relevant for the copper-oxide superconductors which are usually classified as doped charge-transfer insulators. We shall (1) briefly discuss based on a study of the 3-band Hubbard model why the charge-transfer gap and the low-lying excitations of the doped systems may be described by the more simple 1-band Hubbard model, which reduces in the strong coupling limit to the t-J model. The subsequent discussion covers the following topics: (2) the Green's function for a single hole in the t−J model, (3) the suppression of staggered magnetization at small doping concentration as a result of the motion of the holes, (4) the spectral function and Fermi surface at moderate doping, i.e. in the spin liquid phase, and (5) the doping dependence of the optical conductivity.

1 Introduction

Shortly after the discovery of superconductivity in the copper oxides by Bednorz and Müller [1] it was suggested by Anderson [2] that the phenomenon of high temperature superconductivity must be explained in the framework of doped Mott-Hubbard insulators. This prompted a renaissance in the study of the Hubbard model and its strong coupling limit, the t−J model, which are now widely accepted to be relevant models that describe the low energy physics in these compounds. In spite of the huge efforts made, there is still no consensus on the mechanism of high temperature superconductivity (HTSC'y)[3, 4]. These models have a long history, dominated until recently by applications to the study of magnetism and correlation effects in transition metals and their compounds [5, 6].

Given these models a natural strategy is to ask the question: 'To which extent are these models able to describe the peculiar normal state properties of these compounds?' This is the strategy we will follow, yet we will limit ourselves to the discussion of the single-particle Green's function.
Based on a study of the 3-band Hubbard model, we shall briefly discuss in this paper why the charge-transfer gap and the low-lying excitations of the doped systems may be described by the more simple 1-band Hubbard model; (2) the Green's function for a single hole in the t-J model, (3) the suppression of staggered magnetization at small doping concentration as a result of the motion of the holes, (4) the spectral function and Fermi surface at moderate doping, and (5) the doping dependence of the optical conductivity.
Handbook of Plasma Physics

Volume 3

General editors

M.N. Rosenbluth
University of California, SD
La Jolla, CA, USA

R.Z. Sagdeev
Space Research Institute, Academy of Sciences of the USSR
Moscow, USSR
and
University of Maryland
College Park, MD, USA

Physics of Laser Plasma

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1991

NORTH-HOLLAND
AMSTERDAM-LONDON-NEW YORK-TOKYO
This volume provides a comprehensive review of laser fusion plasma physics and contains very up-to-date information on high density plasma physics and radiation transport, useful for astrophysicists and high density physicists. Two chapters (3 and 4) deal with soft X-rays emitted by the plasmas, their use as diagnostic tool and the production of black-body radiation in this spectral range. Chapters 5 and 6 put main emphasis on the hydrodynamics of compression and heating of spherically symmetric targets, the problems of Rayleigh-Taylor instabilities and the requirements imposed on the homogeneity of the laser radiation. The numerous phenomena occurring in the low-density corona region through interaction of the intense electromagnetic radiation with a plasma are treated in chapters 7-10. The theoretical treatment of plasma turbulence excited in the corona and the description of the main linear and nonlinear interaction phenomena with emphasis on the experiments is followed by a special article on resonance absorption and ponderomotive action. The acceleration of electrons by plasma waves (an effect adverse to the fusion researcher) and its controlled use for advanced accelerators is dealt with in chapter 11.
Chapter 5

Direct Drive Fusion Studies

M.C. Richardson*

Center for X-ray Optics, Accelerator and Fusion Research Division
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Berkeley, CA 94720, USA

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Handbook of Plasma Physics, Eds M.N. Rosenbluth and R.Z. Sagdeev
Direct-drive fusion demands severe constraints on laser irradiation uniformity that do not apply to indirect drive. The intent of this chapter is to review the primary physics issues currently considered relevant to the successful demonstration of directly driven high-density implosions. Not all aspects of the direct-drive fusion problem are discussed in equal depth. The review of topics described in detail in other articles of this volume is limited to discussion of their immediate relevance to direct-drive fusion.
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