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Nota di contenuto	Foreword; Contents; 14. Trapping of particles; 15. Two-body interactions at low temperatures; Acknowledgments; 1. General introduction; Purpose of this book; Organization of the book; Part 1 - Advances in spectroscopy; Part 2 - Perturbations of atomic levels by light; Part 3 - Multiphoton processes; Part 4 - Control of atomic motion. Cooling and trapping; Part 5 - Ultracold interactions and their control; Part 6 - Atomic interferometry. Entangled states; Part 7 - Quantum gases; Part 8 - A few frontiers of atomic physics; 2. General background; 2.1 Introduction 2.2 The two interacting systems: atom and field2.2.1 External and internal atomic variables; 2.2.2 Classical versus quantum treatments of atomic variables; 2.2.3 Classical description of field variables; 2.2.4 Quantum description of field variables; 2.2.5 Atom-field interaction Hamiltonian in the long wavelength approximation; 2.2.6 Elementary interaction processes; 2.3 Basic conservation laws; 2.3.1 Conservation of the total linear momentum; (i) Case of free atoms; (ii) Case of atoms trapped in an external potential; 2.3.2 Conservation of the total angular momentum

(i) Selection rules for the internal angular momentum; (ii) Selection rules for the external angular momentum; 2.4 Two-level atom interacting with a coherent monochromatic field. The Rabi oscillation; 2.4.1 A simple case: magnetic resonance of a spin  $1/2$ ; 2.4.2 Extension to any two-level atomic system; 2.4.3 Perturbative limit; 2.4.4 Two physical pictures for Ramsey fringes; (i) Interference between two different paths; (ii) Interpretation in terms of linear superpositions of states; 2.5 Two-level atom interacting with a broadband field. Absorption and emission rates  
 2.5.1 Absorption rate deduced from a semiclassical treatment of the field; 2.5.2 Physical discussion. Relaxation time and correlation time; 2.5.3 Sketch of a quantum treatment of the absorption process; 2.5.4 Extension to spontaneous emission; 2.6 Two-level atom interacting with a coherent monochromatic field in the presence of damping; Light: a source of information on atoms; Introduction; 3. Optical methods; 3.1 Introduction; 3.2 Double resonance; 3.2.1 Principle of the method; 3.2.2 Predicted shape for the double resonance curve; 3.2.3 Experimental results  
 3.2.4 Interpretation of the Majorana reversal; 3.3 Optical pumping [Kastler (1950)]; 3.3.1 Principle of the method for a  $J_g = 1/2$   $J_e = 1/2$  transition; 3.3.2 Angular momentum balance; 3.3.3 Double role of light; 3.4 First experiments on optical pumping; 3.5 How can optical pumping polarize atomic nuclei?; 3.5.1 Using hyperfine coupling with polarized electronic spins; 3.5.2 First example: optical pumping experiments with mercury-199 atoms; 3.5.3 Second example: combining optical pumping with metastability exchange collisions for helium-3  
 3.5.4 A new application: magnetic resonance imaging of the lung cavities

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## Sommario/riassunto

This book presents a comprehensive overview of the spectacular advances seen in atomic physics during the last 50 years. The authors explain how such progress was possible by highlighting connections between developments that occurred at different times. They discuss the new perspectives and the new research fields that look promising. The emphasis is placed, not on detailed calculations, but rather on physical ideas. Combining both theoretical and experimental considerations, the book will be of interest to a wide range of students, teachers and researchers in quantum and atomic physics.

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2. Record Nr.	UNINA9910827387703321
Autore	Allin Paul
Titolo	The wellbeing of nations : meaning, motive and measurement / / Paul Allin and David J. Hand
Pubbl/distr/stampa	Chichester, [England] : , : Wiley, , 2014 ©2014
ISBN	1-118-91704-9 1-118-91703-0
Descrizione fisica	1 online resource (291 pages) : illustrations (some color), tables, charts, graphs
Classificazione	BUS021000
Disciplina	302
Soggetti	Happiness Well-being Cost and standard of living National income - Accounting
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Bibliographic Level Mode of Issuance: Monograph
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Machine generated contents note: Chapter 1: What is national wellbeing and why measure it? 1.1 Motivation: Why measure wellbeing? 1.2 What is individual wellbeing? 1.3 Aspects of individual wellbeing 1.4 How to measure individual wellbeing 1.4.1 Basics of measurement 1.4.2 What is measured matters 1.5 Properties of measurements 1.5.1 Validity 1.5.2 Reliability 1.6 Objective or subjective? 1.7 Combining multiple aspects 1.8 What is national wellbeing? 1.9 And how to measure national wellbeing 1.10 Structure of the book References Chapter 2: A short history of national wellbeing and its measurement 2.1 The good society and philosophies of the role of government, from ancient times 2.2 Utilitarianism 2.3 The American constitution 2.4 Official statistics - statistics about the state and about the state of society 2.5 National accounts and GDP 2.6 More to life than GDP 2.7 Social indicator movement and measuring quality of life 2.8 Health and wellbeing 2.9 Rise of measurement of psychological wellbeing (life satisfaction, happiness, worthwhile lives) 2.10 The Easterlin paradox 2.11 Taking note of the change in the quality of the goods and services

we use 2.12 Capabilities approach to quality of life (Sen) and the Human Development Index 2.13 Social capital and public value 2.14 Limits to growth and sustainable development indicators 2.15 Commentary References Chapter 3: Recent developments: towards economic, social and environmental accounts 3.1 Mis-measuring our lives: the report by the Commission on the Measurement of Economic Performance and Social Progress 3.2 Replacing the Millennium Development Goals 3.3 A new global movement? 3.4 Commentary References Chapter 4: Measuring individual wellbeing 4.1 On quantification 4.2 Single measures of wellbeing 4.3 Combining aspects of wellbeing 4.3.1 Causes, effects, and correlates 4.3.2 Subjective components of wellbeing 4.3.3 Weighted sums 4.4 Components of individual wellbeing 4.5 The frailty of memory 4.6 The devil's in the details 4.7 Conclusion References Chapter 5: Preparing to measure national wellbeing 5.1 Towards a user requirement for measures of national wellbeing and progress 5.2 Towards a framework to measure the progress of societies 5.3 Constructing measures of progress and national wellbeing: identifying and meeting user requirements 5.4 Commentary References Chapter 6: How to measure national wellbeing 6.1 Drawing on the national economic accounts 6.2 Extending the national accounts 6.3 Indicator sets describing social and environmental conditions relating to wellbeing 6.4 Survey-based data on subjective wellbeing 6.5 Developments in measuring national wellbeing and progress around the world 6.6 Important issues in the measurement of national wellbeing References Chapter 7: Wellbeing policy and measurement in the UK Chapter 8: Conclusions 8.1 Progress? 8.2 Measuring wellbeing 8.3 New technologies, new data 8.4 Beyond the economy 8.5 The future References Annex: Sources of methods and measures of wellbeing and progress Index .

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## Sommario/riassunto

"What is national wellbeing and what is progress? Why measure these definitions? Why are measures beyond economic performance needed and how will they be used? How do we measure national wellbeing & turn the definitions into observable quantities? Where are we now and where to next? These questions are asked and answered in this much needed, timely book. The Wellbeing of Nations provides an accessible and comprehensive overview of the measurement of national wellbeing, examining whether national wellbeing is more than the sum of the wellbeing of everyone in the country, and identifying and reviewing requirements for new measures. It begins with definitions, describes how to operationalize those definitions, and takes a critical look at the uses to which such measures are to be put. The authors examine initiatives from around the world, using the UK 'measuring national wellbeing programme' as a case study throughout the book, along with case studies drawn from other countries, as well as discussion of the position in some countries not yet drawn into the national wellbeing scene"--

"Provides signposting to resources to be used in the development of sources, analyses and summary measures of national wellbeing and progress"--

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