

1. Record Nr.	UNINA9910454395103321
Titolo	Particle physics and the universe [[electronic resource]] : proceedings of Nobel Symposium 109 : Haga, Slott, Enkoping, Sweden, August 20-25, 1998 / / editors, L. Bergstrom, P. Carlson, C. Fransson
Pubbl/distr/stampa	Stockholm, Sweden, : Royal Swedish Academy of Science, c2000
ISBN	1-281-95615-5 9786611956158 981-281-043-9
Descrizione fisica	1 online resource (276 p.)
Collana	Physica scripta ; ; v. T85
Altri autori (Persone)	BergstromL (Lars) CarlsonPer FranssonC (Claes)
Disciplina	523.01972 539.7
Soggetti	Particles (Nuclear physics) Cosmology Nuclear astrophysics Electronic books.
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references.
Nota di contenuto	Contents; Committees; List of participants; Preface; Remembering David N. Schramm; References; Review of Big Bang Nucleosynthesis and Primordial Abundances; Abstract; 1. Introduction; 2. Physics of BBN; 3. Measurement of primordial abundances; 4. Deuterium in quasar spectra; 5. Helium; 6. ^3He ; 7. Lithium; 8. Beryllium; 9. Are the different nuclei concordant or is there a crisis?; 10. Non-standard BBN; 11. Cosmological baryon density; 12. The achievements of BBN; Acknowledgements; References; Cosmology with Clusters of Galaxies; Abstract; 1. Introduction 2. Cluster dynamics and the mass-to-light ratio4. Evolution of cluster abundance; 5. Summary; Acknowledgements; References; Determination of Cosmological Parameters; Abstract; 1. Introduction and brief historical overview; 2. Determination of Q_m ; 3. Determination of Q_A ; 4. Determination of H_0 ; 5. Determination of t_0 ; 6. The cosmic

microwave background radiation and cosmological parameters; 7. Discussion and summary; Acknowledgments; References; The Acceleration of the Universe: Measurements of Cosmological Parameters from Type Ia Supernovae; Abstract

1. Cosmological parameters from "standard candles"; 2. Type Ia supernovae as "standard candles"; 3. High-redshift supernova data; 4. Fits to QM and QA; 5. Systematic uncertainties and cross-checks; 6. Results and error budget; 7. Conclusions and discussion; References; Bias is Complicated; Abstract; 1. Introduction; 2. Ruling out simple biasing; 3. Measuring $r(k)$; 4. Conclusions; Acknowledgements; References; Solar Neutrinos: an Overview; Abstract; 1. Introduction; 2. Standard model predictions; 3. Three solar neutrino problems; 4. Uncertainties in the flux calculations

5. How large an uncertainty does helioseismology suggest? 6. Fits without solar models; 7. Neutrino oscillations; 8. Discussion and conclusion; Acknowledgements; References; Radiochemical Solar Neutrino Experiments and Implications; Abstract; 1. Introduction; 2. General considerations about radiochemical experiments; 3. Homestake chlorine experiment; 4. Gallium for pp-neutrino detection; 5. Gallex; 6. Sage; 7. Interpretation and implications; 8. Outlook; References; Evidence for Neutrino Oscillation Observed in Super-Kamiokande; Abstract; 1. Introduction; 2. Super-Kamiokande detector

3. Atmospheric Neutrinos 4. Conclusion; Acknowledgements; References; Neutrino Oscillations; Abstract; 1. Introduction; 2. Atmospheric neutrinos; 3. Solar neutrinos; 4. Accelerator neutrinos; 5. Neutrino mass-mixing patterns; 6. Conclusions and prospects; Acknowledgements; References; Primary Cosmic Rays Antiprotons and Atmospheric Neutrinos; Abstract; 1. Introduction; 2. Primary spectra; 3. Atmospheric neutrinos; 4. Antiprotons; Acknowledgement; References; High Energy Cosmic Neutrinos; Abstracts; 1. Introduction; 2. Science goals; 3. High energy neutrino observatories

4. Future arrays with kilometer dimensions

Sommario/riassunto

It is generally felt in the cosmology and particle astrophysics community that we have just entered an era which later can only be looked back upon as a golden age. Thanks to the rapid technical development, with powerful new telescopes and other detectors taken into operation at an impressive rate, and the accompanying advancement of theoretical ideas, the picture of the past, present and future Universe is getting ever clearer. Some of the most exciting new findings and expected future developments are discussed in this invaluable volume. The topics covered include the physics of the early U