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Contents

- Aurell, E., Salomonson, P.: On Functional Determinants of Laplacians in Polygons and Simplicial Complexes 233
- Beatty, M. → Palmer, J. 97
- Beck, J.: Convex Bases of PBW Type for Quantum Affine Algebras 193
- Beck, J.: Braid Group Action and Quantum Affine Algebras 555
- Bleher, P. M.: Semiclassical Quantization Rules Near Separatrices 621
- Bershadsky, M., Cecotti, S., Ooguri, H., Vafa, C.: Kodaira-Spencer Theory of Gravity and Exact Results for Quantum String Amplitudes 311
- Bertini, L., Cancrini, N., Jona-Lasinio, G.: The Stochastic Burgers Equation 211
- Bordemann, M., Meinrenken, E., Schlichenmaier, M.: Toeplitz Quantization of Kähler Manifolds and $\mathrm{gl}(N)$, $N \rightarrow \infty$ Limits 281
- Cancrini, N. → Bertini, L. 211
- Cecotti, S. → Bershadsky, M. 311
- Constantin, P., E, W., Titi, E. S.: Onsager's Conjecture on the Energy Conservation for Solutions of Euler's Equation 207
- Deift, P. A., Zhou, X.: Long-time Asymptotics for Integrable Systems. Higher Order Theory 175
- Del Rio, R., Makarov, N., Simon, B.: Operators with Singular Continuous Spectrum: II. Rank One Operators 59
- Etingof, P. I., Frenkel, I. B.: Central Extensions of Current Groups in Two Dimensions 429
- Evans, D. E., Kawahigashi, Y.: Orbifold Subfactors from Hecke Algebras 445
- Fitzsimmons, P. J., Hambly, B. M., Kumagai, T.: Transition Density Estimates for Brownian Motion on Affine Nested Fractals 595
- Frenkel, I. B. → Etingof, P. I. 429
- Guimarães, M. E. X., Linet, B.: Scalar Green's Functions in an Euclidean Space with a Conical-Type Line Singularity 297
- Hambly, B. M. → Fitzsimmons, P. J. 595
- Jitomirskaya, S. Ya.: Anderson Localization for the Almost Mathieu Equation: A Non-perturbative Proof 49
- Jitomirskaya, S., Simon, B.: Operators with Singular Continuous Spectrum: III. Almost Periodic Schrödinger Operators 201
- Jona-Lasinio, G. → Bertini, L. 211
- Kato, S.: R-Matrix Arising from Affine Hecke Algebras and its Application to Macdonald's Difference Operators 533
- Kawahigashi, Y. → Evans, D. E. 445
- King, C.: Resonant Decay of a Two State Atom Interacting with a Massless Non-Relativistic Quantised Scalar Field 569
- Kumagai, T. → Fitzsimmons, P. J. 595
- Linet, B. → Guimarães, M. E. X. 297
- Makarov, N. → Del Rio, R. 59
- Martinelli, F., Olivieri, E., Schonmann, R. H.: For 2-D Lattice Spin Systems Weak Mixing Implies Strong Mixing 33
- Matsumura, A., Nishihara, K.: Asymptotic Stability of Traveling Waves for Scalar Viscous Conservation Laws with Non-convex Nonlinearity 83
- Meinrenken, E. → Bordemann, M. 281
- Nishihara, K. → Matsumura, A. 83
- Olivieri, E. → Martinelli, F. 33
- Ooguri, H. → Bershadsky, M. 311

- Palmer, J., Beatty, M., Tracy, C. A.: Tau Functions for the Dirac Operator on the Poincaré Disk 97
- Rezakhanlou, F.: Evolution of Tagged Particles in Non-Reversible Particle Systems 1
- Salomonson, P. R Aurell, E. 233
- Schlichenmaier, M. R Bordemann, M. 281
- Schonmann, R. H. R Martinelli, F. 33
- Simon, B. R Del Rio, R. 59
- Simon, B. R Jitomirskaya, S. 201
- Stanciu, S.: Additional Symmetries of Super-symmetric KP Hierarchies 261
- Taormina, A.: New Identities Between Unitary Minimal Virasoro Characters 69
- Titi, W. E., E. S. R Constantin, P. 207
- Tracy, C. A. R Palmer, J. 97
- Vafa, C. R Bershadsky, M. 311
- Zhou, X. R Deift, P. A. 175
- Zhu, Y.: Global Vertex Operators on Riemann Surfaces 485

Indexed in Current Contents
Evaluated and abstracted for PHYS on STN

Communications in
**Mathematical
 Physics**

Volume 165 Number 1 1994

- F. Rezakhanlou Evolution of Tagged Particles in Non-Reversible Particle Systems 1
- F. Martinelli, E. Olivieri, R. H. Schonmann For 2-D Lattice Spin Systems Weak Mixing Implies Strong Mixing 33
- S. Ya. Jitomirskaya Anderson Localization for the Almost Mathieu Equation: A Nonperturbative Proof 49
- R. Del Rio, N. Makarov, B. Simon Operators with Singular Continuous Spectrum: II Rank One Operators 59
- A. Taormina New Identities Between Unitary Minimal Virasoro Characters 69
- A. Matsumura, K. Nishihara Asymptotic Stability of Traveling Waves for Scalar Viscous Conservation Laws with Non-convex Nonlinearity 83
- J. Palmer, M. Beatty, C. A. Tracy Tau Functions for the Dirac Operator on the Poincaré Disk 97
- P. A. Deift, X. Zhou Long-time Asymptotics for Integrable Systems. Higher Order Theory 175
- J. Beck Convex Bases of PBW Type for Quantum Affine Algebras 193
- S. Jitomirskaya, B. Simon Operators with Singular Continuous Spectrum: III. Almost Periodic Schrödinger Operators 201
- P. Constantin, W. E. E. S. Titi Onsager's Conjecture on the Energy Conservation for Solutions of Euler's Equation 207

Indexed in *Current Contents*

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A mathematical look at relativity

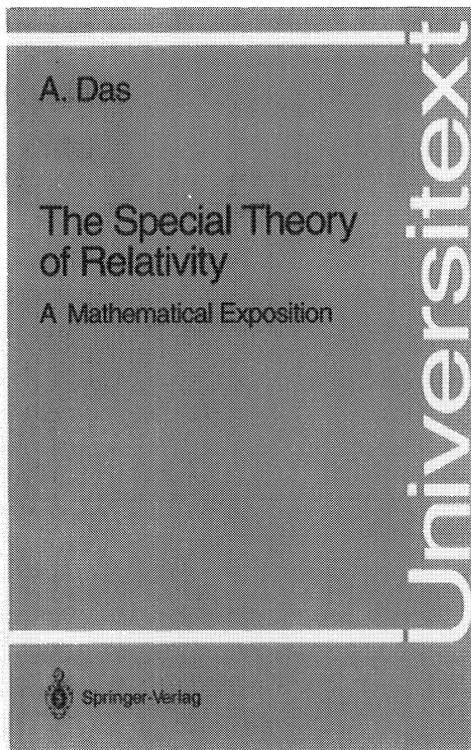
A. Das, Simon Fraser University, Burnaby, BC

The Special Theory of Relativity

A Mathematical Exposition

1993. XII, 214 pp. 27 figs. (Universitext)
Softcover DM 70,- ISBN 3-540-94042-1

Based on a course taught at Simon Fraser University, this book presents the special theory of relativity from a mathematical point of view. It begins with the axioms for Minkowski space-time, and discusses the kinematics of special relativity in terms of Lorentz transformations. Extending the discussion to spinors, the author shows how a unimodular mapping of the spinor space can induce a proper Lorentz mapping on the Minkowski space. Relativistic mechanics is discussed from a Lagrangian point of view, and the book concludes with a development of relativistic (classical) field theory, including a proof of Noether's theorem and discussions of the Klein-Gordon, electromagnetic, and Dirac fields. The final chapter describes recent work on classical fields in an eight-dimensional covariant phase space.



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