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Nota di contenuto	Anomalous Transport; Contents; Preface; List of Contributors; 1 In Memoriam: Radu Balescu; 1.1 Radu Balescu's Abstract for the Conference on Anomalous Transport in Bad Honnef; 1.2 The Scientific Career of Radu Balescu by Boris Weyssow; 1.3 My Memory of Radu Balescu by Angelo Vulpiani; 1.4 My Memory of Radu Balescu by Francesco Mainardi; 1.5 In Memoriam: Radu Balescu by Raul Sanchez; 1.6 Remembering Radu Balescu by Diego del-Castillo-Negrete; References; Part I Fractional Calculus and Stochastic Theory; Introduction to Part I; 2 Threefold Introduction to Fractional Derivatives 2.1 Historical Introduction to Fractional Derivatives2.1.1 Leibniz; 2.1.2 Euler; 2.1.3 Paradoxa and Problems; 2.1.4 Liouville; 2.1.5 Fourier; 2.1.6 Grunwald; 2.1.7 Riemann; 2.2 Mathematical Introduction to Fractional Derivatives; 2.2.1 Fractional Integrals; 2.2.2 Fractional Derivatives; 2.2.3 Eigenfunctions; 2.3 Physical Introduction to Fractional Derivatives; 2.3.1 Basic Questions; 2.3.2 Fractional Space; 2.3.3 Fractional Time; 2.3.4 Identification of from Models; Appendix A: Tables; Appendix B:

Function Spaces; Appendix C: Distributions; References

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5.6.3 Space-Homogeneous Relaxation in Absence of External Field

Sommario/riassunto

This multi-author reference work provides a unique introduction to the currently emerging, highly interdisciplinary field of those transport processes that cannot be described by using standard methods of statistical mechanics. It comprehensively summarizes topics ranging from mathematical foundations of anomalous dynamics to the most recent experiments in this field. In so doing, this monograph extracts and emphasizes common principles and methods from many different disciplines while providing up-to-date coverage of this new field of research, considering such diverse applications as plasma