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Aspects of Kolmogorov Complexity: The Physics of Information

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The research presented in Aspects of Kolmogorov Complexity addresses the fundamental standard of defining randomness as measured by a Martin-Lof level of randomness as found in random sequential binary strings. A classical study of statistics that addresses both a fundamental standard of statistics as well as an applied measure for statistical communication theory. The research points to compression levels in a random state that are greater than is found in current literature. A historical overview of the field of Kolmogorov Complexity and Algorithmic Information Theory, a subfield of Information Theory, is given as well as examples using a radix 3, radix 4, and radix 5 base numbers for both random and non-random sequential strings. The text also examines monochromatic and chromatic symbols and both theoretical and applied aspects of data compression as they relate to the transmission and storage of information. The appendix contains papers on the subject given at conferences and the references are current.

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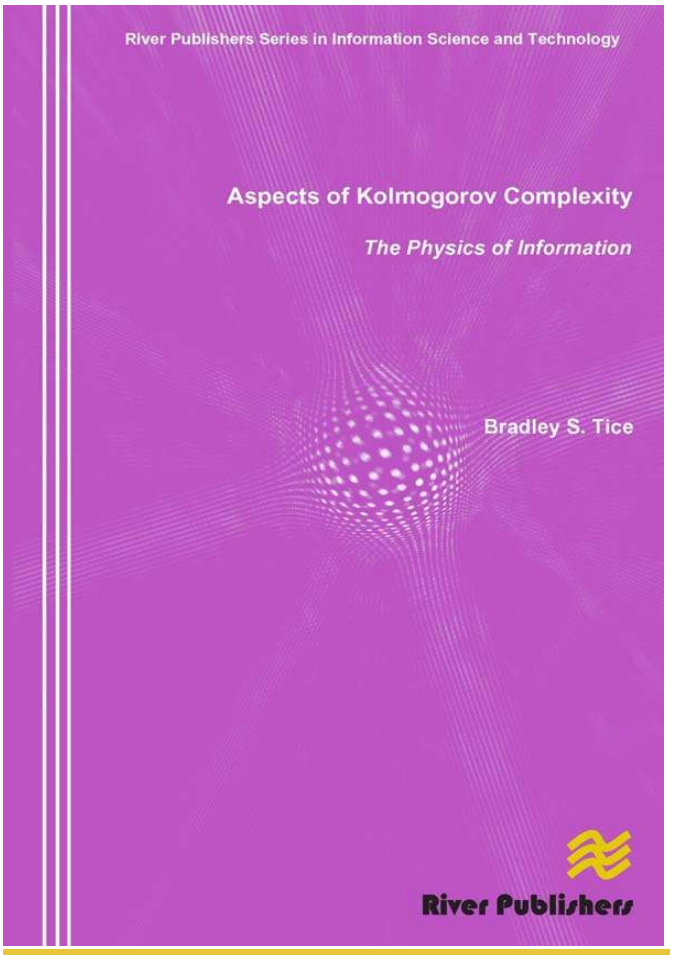
Technical topics addressed in Aspects of Kolmogorov Complexity include:

- Statistical Communication Theory
- Algorithmic Information Theory
- Kolmogorov Complexity
- Martin-Lof Randomness
- Compression, Transmission and Storage of Information



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