Effect of Truncation Based On Residual Entropy

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Abstract

This thesis explores the idea of residual entropy, which is the amount of entropy that remains in a system even in its ground state and represents the innate disorder and unpredictable nature of microscopic systems. By examining residual entropy's theoretical underpinnings, historical uses, and practical ramifications in a range of scientific domains, the paper seeks to provide a thorough understanding of the concept. We investigate the history and mathematical expressions of residual entropy, following its progression from early thermodynamic research to modern information theory models. The thesis clarifies how residual entropy has been imagined and quantified across time by examining significant theoretical contributions. We offer novel approaches to residual entropy quantification in complicated systems. The goal of the project is to improve the accuracy

of residual entropy measurements by creating new models and analytical methods that will provide academics and practitioners with more precise tools.