

The science of computer benchmarking

Hockney, Roger W., author

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Abstrak

This book provides an introduction to computer benchmarking. Hockney includes material concerned with the definition of performance parameters and metrics and defines a set of suitable metrics with which to measure performance and units with which to express them. He also presents new ideas resulting from the application of dimensional analysis to the field of computer benchmarking. This results in the definition of a dimensionless universal scaling diagram that completely describes the scaling properties of a class of computer benchmarks on a single diagram, for all problem sizes and all computers describable by a defined set of hardware parameters.

The principle of computational similarity, which states the requirements for two computer programs to have the same optimum self-speedup, optimum number of processors, and scaling is also described.