Scale Invariance. Self-Similarity of the Physical World

Description: Bringing the concepts of dimensional analysis, self-similarity, and fractal dimensions together in a logical and self-contained manner, this book reveals the close links between modern theoretical physics and applied mathematics.

The author focuses on the classic applications of self-similar solutions within astrophysical and fluid systems, with some general theory of self similar solutions, so as to provide a framework for researchers to apply the principles across all scientific disciplines. He discusses recent advances in theoretical techniques of scaling while presenting a uniform technique that encompasses these developments, as well as applications to almost any branch of quantitative science.

The result is an invaluable reference for active scientists, featuring examples of dimensions and scaling in condensed matter physics, astrophysics, fluid mechanics, and general relativity, as well as in mathematics and engineering.

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