



Pattern Formation : An Introduction to Methods

Rebecca Hoyle



From the stripes of a zebra and the spots on a leopard's back to the ripples on a sandy beach or desert dune, regular patterns arise everywhere in nature. The appearance and evolution of these phenomena has been a focus of recent research activity across several disciplines. This book provides an introduction to the range of mathematical theory and methods used to analyse and explain these often intricate and beautiful patterns. Bringing together several different approaches, from group theoretic methods to envelope equations and theory of patterns in large-aspect ratio-systems, the book also provides insight behind the selection of one pattern over another. Suitable as an upper-undergraduate textbook for mathematics students or as a fascinating, engaging, and fully illustrated resource for readers in physics and biology, Rebecca Hoyle's book, using a non-partisan approach, unifies a range of techniques used by active researchers in this growing field.

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