Universalities in Condensed Matter

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Book Condition: New. Publisher/Verlag: Springer, Berlin | Proceedings of the Workshop, Les Houches, France, March 15-25,1988 | Universality is one of the fascinating features of condensed matter physies: it is the property whereby systems of radieally different composition and structure ex hibit similar behavior. In the mid-1960s the word entered usage to express the fact that the equations of state of several substances could be mapped onto one another near the critical point: critieal universality. Renormalization group theory in the early 1970s provided both an explanation and a sharper definition of universality. Systems with similar behavior - universality classes - correspond to the same fixed point of a renormalization group transformation. A number of brilliant con tributions showed how the same concepts could be applied to non-thermodynamie systems, such as the statisties of self-avoiding walks or of connected clusters on a lattice. A few years later it was realized that chaotie dynamieal systems mayaiso exhibit some degree of universality, the paradigmatic example being the period doubling cascade in the iterated maps of the unit interval into itself. | I Geometrical Approaches.- Hierarchy of Line Defects in Structures.- Are There Universalities in Systems with Frustrated Local Order?.- Contribution to the Theory...

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