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    | Sommario/riassunto | Condition monitoring of machinery is one of the most important aspects of many modern industries. With the rapid advancement of science and technology, machines are becoming increasingly complex. Moreover, an exponential increase of demand is leading an increasing requirement of machine output. As a result, in most modern industries, machines have to work for 24 hours a day. All these factors are leading to the deterioration of machine health in a higher rate than before. Breakdown of the key components of a machine such as bearing, gearbox or rollers can cause a catastrophic effect both in terms of financial and human costs. In this perspective, it is important not only to detect the fault at its earliest point of inception but necessary to design the overall monitoring process, such as fault classification, fault severity assessment and remaining useful life (RUL) prediction for better planning of the maintenance schedule. Information theory is one of the pioneer contributions of modern science that has evolved into various forms and algorithms over time. Due to its ability to address the non-linearity and non-stationarity of machine health deterioration, it has become a popular choice among researchers. Information theory is an effective technique for extracting features of machines under different health conditions. In this context, this book discusses the potential applications, research results and latest developments of information theory-based condition monitoring of machineries. |