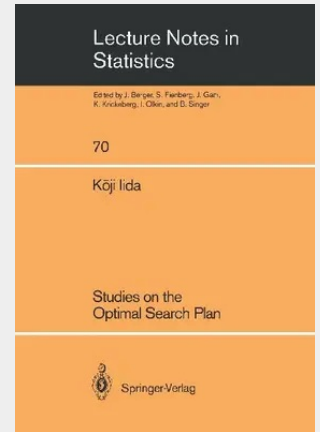


Studies on the Optimal Search Plan

Search theory is concerned with the location of a 'target' given imprecise information concerning its location. The subject has a variety of applications such as locating missing people in wilderness or at sea, searching for mineral deposits, medical diagnosis, and searching for malfunctions in industrial processes. This volume is concerned with search strategies which are optimal in the sense that they minimize the 'risk' or cost of a search where this may be measured in factors such as time or money. Consequently, the author discusses a range of mathematical techniques including non-linear programming, fractional programming, dynamic programming, the calculus of variation, and the Pontryagin maximum principle from optimal control theory. Many numerical examples are presented in order to illustrate the effectiveness of particular techniques. As a result, this book will provide all researchers in search theory with an up-to-date account of this important area of operations research.

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