DESCRIPTION

In 1989 the first edition of this book set out Gittins’ pioneering index solution to the multi-armed bandit problem and his subsequent investigation of a wide of sequential resource allocation and stochastic scheduling problems. Since then there has been a remarkable flowering of new insights, generalizations and applications, to which Glazebrook and Weber have made major contributions.

This second edition brings the story up to date. There are new chapters on the achievable region approach to stochastic optimization problems, the construction of performance bounds for suboptimal policies, Whittle's restless bandits, and the use of Lagrangian relaxation in the construction and evaluation of index policies. Some of the many varied proofs of the index theorem are discussed along with the insights that they provide. Many contemporary applications are surveyed, and over 150 new references are included.

Over the past 40 years the Gittins index has helped theoreticians and practitioners to address a huge variety of problems within chemometrics, economics, engineering, numerical analysis, operational research, probability, statistics and website design. This new edition will be an important resource for others wishing to use this approach.

ABOUT THE AUTHOR

John Gittins, Statistics Department, University of Oxford, UK

Kevin Glazebrook, Department of Management Science, Lancaster University, UK