



Head Direction Cells and the Neural Mechanisms of Spatial Orientation

By Sidney I. Wiener, Jeffrey S. Taube

MIT Press Ltd. Hardback. Book Condition: new. BRAND NEW, Head Direction Cells and the Neural Mechanisms of Spatial Orientation, Sidney I. Wiener, Jeffrey S. Taube, Head direction cells -- neurons that fire only when an animal orients its head in a certain direction -- are found in several different brain areas, with different neurons selective for different head orientations; they are influenced by landmarks as well as motor and vestibular information concerning how the head moves through space. These properties suggest that head direction cells play an important role in determining orientation in space and in navigation. Moreover, the prominence, strength, and clarity of head direction signals indicate their importance over the course of evolution and suggest that they can serve as a vital key for understanding brain function. This book presents the latest findings on head direction cells in a comprehensive treatment that will be a valuable reference for students and researchers in the cognitive sciences, neuroscience, computational science, and robotics. The book begins by presenting head direction cell properties and an anatomical framework of the head direction system. It then looks at the types of sensory and motor information that control head direction cell firing, covering topics including...



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