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| Titolo | Auditory Information Processing / / by Harunori Ohmori |
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| ISBN | 981-329-713-1 |
| Edizione | [1st ed. 2019.] |
| Descrizione fisica | 1 online resource (xi, 144 pages) : illustrations |
| Disciplina | 612.8 |
| Soggetti | Neurociències<br>Neurosciences<br>Cytology<br>Neurobiology<br>Cell Biology<br>Llibres electrònics |
| Lingua di pubblicazione | Inglese |
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| Livello bibliografico | Monografia |
| Nota di contenuto | Preface -- 1.Hair cell mechano-electrical transduction and synapse transmission -- 2.Signal processing in the brainstem auditory nuclei -- 3.Central Auditory Processing. |
| Sommario/riassunto | This book explains neural function at the level of ion channels and membrane excitability in neurons along the ascending auditory pathway. Airborne sound information is captured by the ears, transformed to neural electrical signals, and then processed in the brain. Readers will find full descriptions of these processes of signal transduction and transformation. First, it is described how, at the level of hair cells, the receptor cells in the cochlea, the sound-evoked vibration is transduced to electrical signals and transmitted to the auditory nerve fibers. In the second section it is explained how the electrical activity of these fibers is processed at the cochlear nucleus in order to extract the temporal and level information of sound separately and then transmitted to the third nucleus for processing of the interaural differences, such as the interaural time difference and the interaural level difference. The third section summarizes the transformation of auditory temporal information to the rate of neural firing activity in the midbrain and the higher nuclei, including the |

cortex, based on in vivo results. Finally, emerging new technologies to investigate auditory signal processing are reviewed and discussed.