

1. Record Nr.	UNINA9910647399803321
Autore	Li Guoyuan
Titolo	Bio-Inspired Locomotion Control of Limbless Robots / / by Guoyuan Li, Houxiang Zhang, Jianwei Zhang
Pubbl/distr/stampa	Singapore : , : Springer Nature Singapore : , : Imprint : Springer, , 2023
ISBN	981-19-8384-4
Edizione	[1st ed. 2023.]
Descrizione fisica	1 online resource (185 pages)
Disciplina	006.3
Soggetti	Automatic control Robotics Automation Marine engineering Artificial intelligence Control, Robotics, Automation Marine Engineering Artificial Intelligence
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Preface -- Limbless locomotion introduction (classification and the corresponding locomotive features in nature) -- Limbless locomotion control in robotic domain -- Design of a lamprey spinal central pattern generator (CPG) -- Limbless locomotion under the lamprey spinal CPG -- Sensory reflex mechanism -- Adaptive limbless locomotion -- Research challenges .
Sommario/riassunto	This book presents a bio-inspired hierarchical control scheme step by step toward developing limbless robots capable of 3D locomotion, fast reflex response, as well as sophisticated reaction to environmental stimuli. This interdisciplinary book introduces how to combine biological concept with locomotion control of limbless robots. The special features of the book include limbless locomotion classification and control, design of biological locomotor and the integration of sensory information into the locomotor using artificial intelligence methods, and on-site demonstrations of limbless locomotion in different scenarios. The book is suitable for readers with engineering

background, especially for researchers focused on bio-inspired robots.

---