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Autore	Bonnard Bernard
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Soggetti	Calculus of variations Neurosciences Applied mathematics Engineering mathematics Mathematical models Bioinformatics Computational biology Calculus of Variations and Optimal Control; Optimization Applications of Mathematics Mathematical Modeling and Industrial Mathematics Computer Appl. in Life Sciences
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Nota di contenuto	1 Historical part - Calculus of variations -- 2 Weak Maximum Principle and Application to Swimming at low Reynolds Number -- 3 Maximum Principle and Application to NMR and MRI -- 4 Conclusion.
Sommario/riassunto	This book introduces readers to techniques of geometric optimal control as well as the exposure and applicability of adapted numerical schemes. It is based on two real-world applications, which have been the subject of two current academic research programs and motivated by industrial use – the design of micro-swimmers and the contrast problem in medical resonance imaging. The recently developed numerical software has been applied to the cases studies presented

here. The book is intended for use at the graduate and Ph.D. level to introduce students from applied mathematics and control engineering to geometric and computational techniques in optimal control.