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| Autore | Buttenschon Andreas |
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| Edizione | [1st ed. 2021.] |
| Descrizione fisica | 1 online resource (VIII, 152 p. 35 illus., 15 illus. in color.) |
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| Disciplina | 574.87 |
| Soggetti | Cell adhesion - Mathematical models<br>Interacció cel·lular<br>Models matemàtics<br>Llibres electrònics |
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| Nota di contenuto | Introduction -- Preliminaries -- The Periodic Problem -- Basic Properties -- Local Bifurcation -- Global Bifurcation -- Non-local Equations with Boundary Conditions -- No-flux Boundary Conditions -- Discussion and future directions. |
| Sommario/riassunto | This monograph considers the mathematical modeling of cellular adhesion, a key interaction force in cell biology. While deeply grounded in the biological application of cell adhesion and tissue formation, this monograph focuses on the mathematical analysis of non-local adhesion models. The novel aspect is the non-local term (an integral operator), which accounts for forces generated by long ranged cell interactions. The analysis of non-local models has started only recently, and it has become a vibrant area of applied mathematics. This monograph contributes a systematic analysis of steady states and their bifurcation structure, combining global bifurcation results pioneered by Rabinowitz, equivariant bifurcation theory, and the symmetries of the non-local term. These methods allow readers to analyze and understand cell adhesion on a deep level. |