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| Autore | Sofonea Mircea |
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| Descrizione fisica | 1 online resource (xiv, 280 pages) : digital, PDF file(s) |
| Collana | London mathematical society lecture note series ; ; 398 |
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| Altri autori (Persone) | MateiAndaluzia |
| Disciplina | 620.1/05 |
| Soggetti | Contact mechanics - Mathematical models<br>Mechanics, Applied - Mathematical models |
| Lingua di pubblicazione | Inglese |
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| Nota di bibliografia | Includes bibliographical references and index. |
| Nota di contenuto | Preliminaries on functional analysis -- Elliptic variational inequalities -- History-dependent variational inequalities -- Modelling of contact problems -- Analysis of elastic contact problems -- Analysis of elastic-visco plastic contact problems -- Analysis of piezoelectric contact problems. |
| Sommario/riassunto | This text provides a complete introduction to the theory of variational inequalities with emphasis on contact mechanics. It covers existence, uniqueness and convergence results for variational inequalities, including the modelling and variational analysis of specific frictional contact problems with elastic, viscoelastic and viscoplastic materials. New models of contact are presented, including contact of piezoelectric materials. Particular attention is paid to the study of history-dependent quasivariational inequalities and to their applications in the study of contact problems with unilateral constraints. The book fully illustrates |

the cross-fertilisation between modelling and applications on the one hand and nonlinear mathematical analysis on the other. Indeed, the reader will gain an understanding of how new and nonstandard models in contact mechanics lead to new types of variational inequalities and, conversely, how abstract results concerning variational inequalities can be applied to prove the unique solvability of the corresponding contact problems.