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   | Record Nr. | UNINA9910337633303321 |
   | Autore | Krack Malte |
   | Titolo | Harmonic Balance for Nonlinear Vibration Problems / / by Malte Krack, Johann Gross |
   | Pubbl/distr/stampa | Cham : , : Springer International Publishing : , : Imprint : Springer, , 2019 |
   | ISBN | 3-030-14023-7 |
   | Edizione | [1st ed. 2019.] |
   | Descrizione fisica | 1 online resource (167 pages) |
   | Collana | Mathematical Engineering, , 2192-4732 |
   | Disciplina | 531<br>531.015 |
   | Soggetti | Engineering mathematics<br>Mechanics<br>Mechanics, Applied<br>Fourier analysis<br>Vibration<br>Dynamics<br>Engineering Mathematics<br>Solid Mechanics<br>Fourier Analysis<br>Vibration, Dynamical Systems, Control |
   | Lingua di pubblicazione | Inglese |
   | Formato | Materiale a stampa |
   | Livello bibliografico | Monografia |
   | Nota di contenuto | Harmonic Balance applied to mechanical systems -- Solving the governing algebraic equations -- Limitations of HB and alternatives -- Solved exercises and homework problems. |
   | Sommario/riassunto | This monograph presents an introduction to Harmonic Balance for nonlinear vibration problems, covering the theoretical basis, its application to mechanical systems, and its computational implementation. Harmonic Balance is an approximation method for the computation of periodic solutions of nonlinear ordinary and differential-algebraic equations. It outperforms numerical forward integration in terms of computational efficiency often by several orders of magnitude. The method is widely used in the analysis of nonlinear |

systems, including structures, fluids and electric circuits. The book includes solved exercises which illustrate the advantages of Harmonic Balance over alternative methods as well as its limitations. The target audience primarily comprises graduate and post-graduate students, but the book may also be beneficial for research experts and practitioners in industry.