1. Record Nr. UNINA9910136610303321

Autore	Zudin Yuri B
Titolo	Theory of Periodic Conjugate Heat Transfer / / by Yuri B. Zudin
Pubbl/distr/stampa	Berlin, Heidelberg : , : Springer Berlin Heidelberg : , : Imprint : Springer, , 2017
ISBN	9783662534458
Edizione	[3rd ed. 2017.]
Descrizione fisica	1 online resource (315 p.)
Collana	Mathematical Engineering, , 2192-4732
Disciplina	621.4022
Soggetti	Thermodynamics Heat engineering Heat transfer Mass transfer Applied mathematics Engineering mathematics Energy systems Physics Engineering Thermodynamics, Heat and Mass Transfer Mathematical and Computational Engineering Energy Systems Applied and Technical Physics
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references at the end of each chapters and index.
Nota di contenuto	Introduction -- Construction of a general solution of the problem -- Solution of characteristic problems -- Universal algorithm of computation of the factor of conjugation -- Solution of special problems -- Step and non-periodic oscillations of the heat transfer intensity -- Practical applications of the theory -- Wall’s thermal effect on hydrodynamic flow stability -- Periodical model of turbulence heat transfer.
Sommario/riassunto	This book provides a detailed yet comprehensive presentation of the theory of periodic conjugate heat transfer. It contains an analytical approach to the effects of thermophysical and geometrical properties

of a solid body on the experimentally determined heat transfer coefficient. The main objective of the book is a simplified description of the interaction between a solid body and a fluid as a boundary value problem of the heat conduction equation. This third and extended edition covers Wall's thermal effect on Landau stability, gas bubbles pulsations in fluids, and also the interplay between periodic conjugate heat transfer and non-Fourier heat conduction. The target audience primarily comprises research experts in the field of thermodynamics and fluid dynamics, but the book may also be beneficial for graduate students in engineering.