

Numerical Methods & Computer Aided Engineering

with MATLAB & ANSYS

Computer Aid Engineering (CAE) is an important tool widely used for designing and analyzing engineering problems nowadays. CAE requires profound backgrounds in mathematics and numerical methods. This book presents clear explanations of fundamental theories behind CAE and wide ranges of applications. The book contains 14 chapters with essential materials that are taught in the CAE course. The finite difference method is presented to solve the boundary and initial value problems. The finite element method is explained to analyze problems governed by the elliptic, parabolic and hyperbolic equations. Associated computer codes are also developed using key features in MATLAB to demonstrate underlying computational processes in CAE programs. ANSYS Software procedures for analyzing the heat transfer, structural and fluid flow problems are illustrated, step by step, in details.

Features:

- This book is ideal for undergraduate and graduate students in mechanical, aeronautical, civil, and industrial engineering as well as practicing engineers.
- Presentation is easy to understand using simple explanations and equations along with illustrations.
- Materials are clear and well-organized in an easy-to-follow approach with logical progression through mathematics and computational methods.
- Numerous examples with diverse applications such as heat transfer, mechanical structures and fluid flows are presented.
- Lots of exercises to practice and accelerate understandings at the end of each chapter.



Published by
Chulalongkorn University Press
Phyathai Road, Bangkok 10330
Tel. +66 2218 3269-70 Fax +66 2218 3547
e-mail: cupress@chula.ac.th
www.cupress.chula.ac.th
Knowledge to All



Numerical Methods
ISBN 978-974-03-4204-5



9 789740 342045
C322
5251000 390.00 Baht



1.60 kg.CO₂eq/book

Production of this printed book helps reducing global warming effect by 100% compensating the amount of greenhouse gases emissions



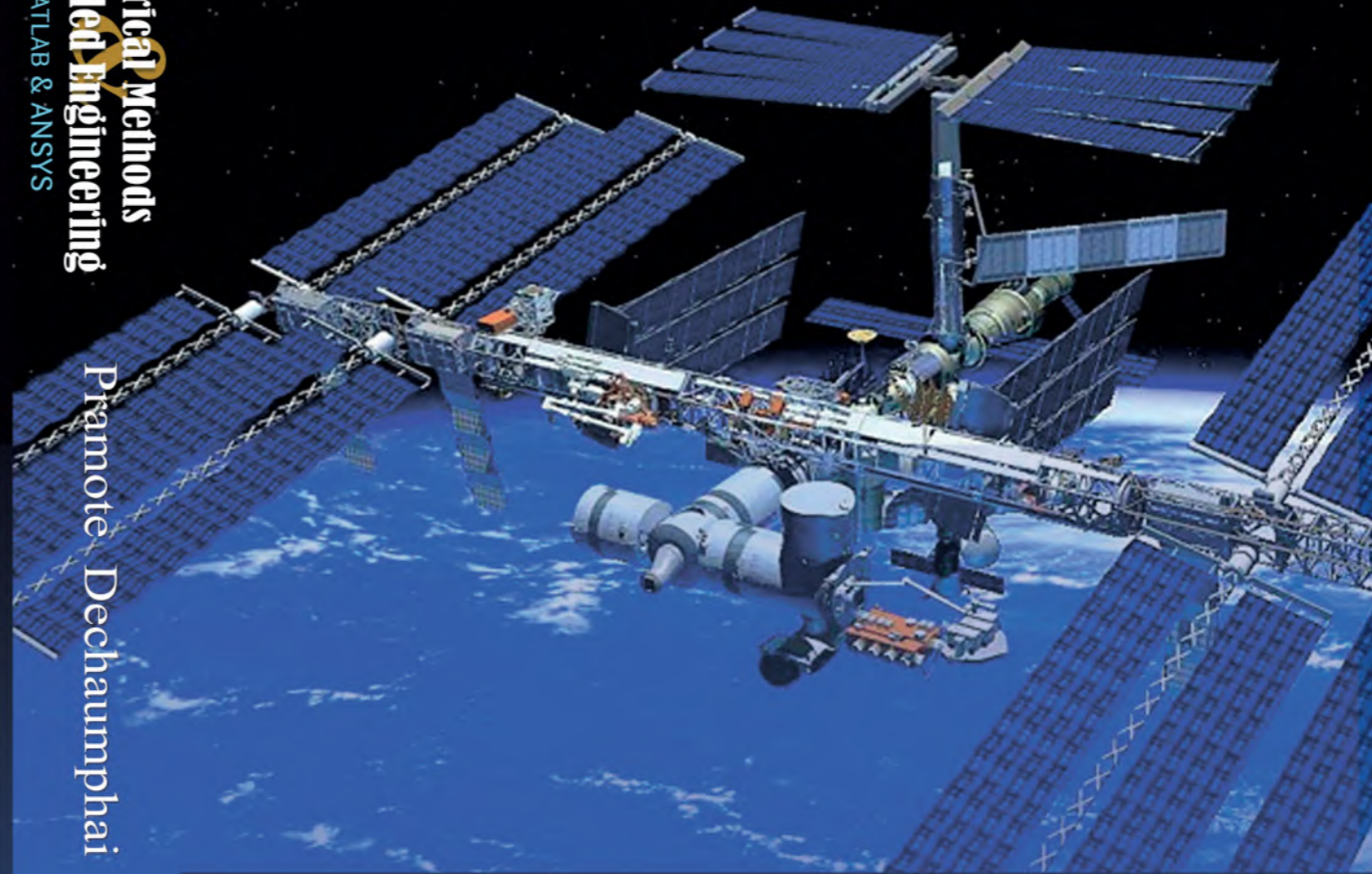
Numerical Methods
&
Computer Aided Engineering
with MATLAB & ANSYS

Pramote Dechaumphai

CUP. 2598

Numerical Methods & Computer Aided Engineering

with MATLAB & ANSYS



Pramote Dechaumphai



Published by
Chulalongkorn University Press
Phyathai Road, Bangkok 10330
Tel. +66 2218 3269-70 Fax +66 2218 3547
e-mail: cupress@chula.ac.th
www.cupress.chula.ac.th

Knowledge to All

Pramote Dechaumphai

Numerical Methods & Computer Aided Engineering

with MATLAB & ANSYS