



CONTEMPORARY ISSUES AND MODERN DESIGN TOOLS

Edited by

HAMID R. PARSAEI AND WILLIAM G. SULLIVAN

CHAPMAN & HALL





To our parents, Abolfazl Parsaei and Barat Atabaki, William H. Sullivan and Kathleen A. Glasstone

## Concurrent Eng

Contemporary iss modern design

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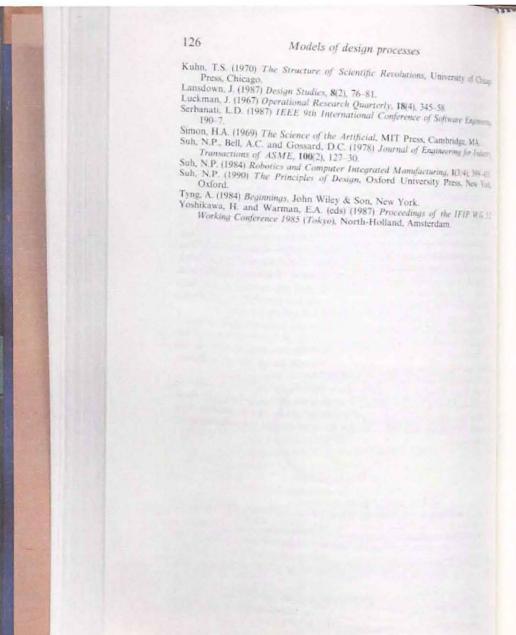
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Steven H. Kim

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CHAPTER 8

## A decision-based approaconcurrent design

Farrokh Mistree, Warren Smith and Bert I

Modern, computer-based concurrent design requires a holistic integrates the representation, management and processing of Integration is possible through the 'standardization' of informment within a design process. We approach standardization perspective of decision-based design (DBD), namely, that 'the pan engineer, in the design of an artifact, is to take decision decisions are foundational, we enable concurrent design process is multaneous analysis, synthesis and resolution of multiple design that the foundamental paradigment.

In this chapter, we introduce the fundamental paradigms describe a decision-based design methodology called the de problem technique (DSPT). Specifically, we start by providi ground and by stating the axioms needed to characterize decision support problems (DSPs). Introduced next is the for semantics of DSPs. This generic protocol ensures the applit DSPT across varying domains of application by providing structured mappings between the designers' view of the particular syntax needed to facilitate solution. Finally, we examples from marine design to explicate our approach.

### 8.1 SHIP DESIGN CASE STUDIES - NOMENCL.

#### Variabless

- L or LBP length between perpendiculars in meters
- B or BEAM ship design beam in meters T or DRAFT ship design draft in meters
- D or DEPTH ship design depth in meters
  - block coefficient (ship's hull) =  $\frac{\text{Displaced } v}{\text{L} \times \text{B} \times}$



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