Book Review

Nonlinear Problems in Aviation and Aerospace

S. Sivasundaram (ed.), Gordon Breach, 2000, 379 pp., ISBN 90-5699-222-8

One attends technical conferences presumably to learn of new methods or novel applications of existing ones, to present new findings, to receive criticism and support; in short, to exchange ideas and commence to evaluate them. And while many conferences require speakers to write accompanying documents that provide greater detail and references, these typically comprise various levels of quality in technical writing and content: Some give extensive, scholarly treatments of significant studies, some report work in progress, and others just manage to introduce unusual suggestions for approaching difficult challenges.

Thus it is with this collection of twenty-five papers, a volume of bound proceedings from a conference bearing the same name (and including some additional writings invited for this book). The range of subjects and the methods employed in their study provides a rich assortment for readers (the complete table of contents appears follows). Along with vehicle dynamics and control studies, one finds analyses of noise control, human resource planning, aerodynamics, hydrodynamics, and some innovative control methods.

These papers cover the spectrum of clarity and completeness. Nearly all do a creditable job of putting their topics in the context of previous work, but unfortunately the authors show a wide range of attention to comparing new results with old. Only one-fifth of the abstracts give specifics on the works' results or conclusions. All the papers have been typeset and formatted, creating a superficial impression of a more thorough editing than is actually found. Many contain numerous typographical, spelling, and grammatical errors, and although these may be viewed as mostly annoying, some show a remarkable inattention on the part of the editors. (One finds the statement "These tools have gained recognition in control community with great violence…," referring to mathematical methods.) The index contains a strange, apparently random choice of words such as "*question*" and "*plot*," interspersed with substantive ones such as "*Lyapunov*" or "*stability,*" and is only roughly alphabetized. Devoting resources to a better index (rather than to reformatting the papers) would have allowed the publisher to create a more useful reference work.

Despite these deficiencies, the volume certainly contains an eclectic set of concepts, theories, and specific methods. Browsing the proceedings is never as satisfying as attending the conference, yet readers will likely find here some unexpected insight or redirection in their own studies of nonlinear problems.

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21. Aircraft Strategic Control Synthesis. Vector Lyapunov Function Synthesis, *L. T. Gruyitch*

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