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Nota di contenuto	1 Adaptive Systems -- 1.1 Introduction -- 1.2 Adaptive systems: examples -- 1.3 General structure of adaptive control systems -- 1.4 Illustrating the concepts -- 1.5 Summary of chapter -- 1.6 Notes and references -- 1.7 Exercises -- 2 Systems And Their Representations -- 2.1 Introduction -- 2.2 Notation -- 2.3 The behavior -- 2.4 Latent variables -- 2.5 Equivalent representations -- 2.6 Controllability -- 2.7 Observability -- 2.8 Stability -- 2.9 Elimination of Latent variables -- 2.10 The ring $\mathbb{R}[s]$ -- 2.11 An example -- 2.12 A word about the notation -- 2.13 Summary of chapter -- 2.14 Notes and references -- 3 Adaptive systems : principles of identification -- 3.1 Introduction -- 3.2 Object of interest and model class -- 3.3 Identification criterion and algorithms -- 3.4 Data model assumptions -- 3.5 Analysis of identification algorithms -- 3.6 Persistency of excitation -- 3.7 Summary of chapter -- 3.8 Notes and references -- 3.9 Exercises -- 4 Adaptive Pole Assignment -- 4.1 Introduction -- 4.2 Preliminaries -- 4.3 The system and its representations -- 4.4 Equilibrium analysis -- 4.5 An algorithm for adaptive pole assignment -- 4.6 Analysis of the algorithm -- 4.7 Filtered signals -- 4.8 Modification of the projection

algorithm -- 4.9 Summary of chapter -- 4.10 Notes and references -- 4.11 Exercises -- 5 Direct Adaptive Model Reference Control -- 5.1 Introduction -- 5.2 Basic problem definition -- 5.3 Model reference control: nonadaptive solution -- 5.4 Error model construction -- 5.5 Equilibrium analysis -- 5.6 Adaptive algorithm -- 5.7 Analysis of the adaptive system -- 5.8 Adaptive model reference control with disturbance rejection -- 5.9 Summary of chapter -- 5.10 Notes and references -- 5.11 Exercises -- 6 Universal Controllers -- 6.1 Introduction -- 6.2 Existence of solutions -- 6.3 The first order case -- 6.4 Higher order systems -- 6.5 Mårtensson's algorithm -- 6.6 Summary of chapter -- 6.7 Notes and references -- 6.8 Exercises -- 7 The pole/zero cancellation problem -- 7.1 Introduction -- 7.2 The pole/zero cancellation problem in adaptive control -- 7.3 Combining direct and indirect adaptive control -- 7.4 Adaptive Excitation -- 7.5 A more fundamental viewpoint -- 7.6 Conclusions -- 7.7 Summary of chapter -- 7.8 Notes and references -- 7.9 Exercises -- 8 Averaging Analysis For Adaptive Systems -- 8.1 Introduction -- 8.2 Averaging -- 8.3 Transforming an adaptive system into standard form -- 8.4 Averaging approximation -- 8.5 Application: the MIT rule for adaptive control -- 8.6 Application: echo cancellation in telephony -- 8.7 Summary of chapter -- 8.8 Notes and references -- 8.9 Exercises -- 9 Dynamics of adaptive systems: A case study -- 9.1 Introduction -- 9.2 The example -- 9.3 Global analysis and bifurcations -- 9.4 Adaptive system behavior: ideal case -- 9.5 Adaptive system behavior: undermodelled case -- 9.6 Discussion -- 9.7 Summary of chapter -- 9.8 Notes and References -- 9.9 Exercises -- Epilogue -- A Background material -- A.1 A contraction result -- A.2 The Comparison Principle -- A.2.1 Bellman-Gronwall Lemma -- A.2.2 Perturbed linear stable systems -- A.3 Miscellaneous stability results -- A.3.1 Stability Definitions -- A.3.2 Some Lyapunov stability results -- A.4 Detectability -- A.5 An inequality for linear systems -- A.6 Finite horizon averaging result -- A.7 Maple code for solving Lyapunov equations -- A.8 Maple code for fixed points and two periodic solutions.

Sommario/riassunto

Loosely speaking, adaptive systems are designed to deal with, to adapt to, changing environmental conditions whilst maintaining performance objectives. Over the years, the theory of adaptive systems evolved from relatively simple and intuitive concepts to a complex multifaceted theory dealing with stochastic, nonlinear and infinite dimensional systems. This book provides a first introduction to the theory of adaptive systems. The book grew out of a graduate course that the authors taught several times in Australia, Belgium, and The Netherlands for students with an engineering and/or mathematics background. When we taught the course for the first time, we felt that there was a need for a textbook that would introduce the reader to the main aspects of adaptation with emphasis on clarity of presentation and precision rather than on comprehensiveness. The present book tries to serve this need. We expect that the reader will have taken a basic course in linear algebra and multivariable calculus. Apart from the basic concepts borrowed from these areas of mathematics, the book is intended to be self contained.

2. Record Nr.	UNINA9910495698703321
Autore	Cupers Jean-Louis
Titolo	Euterpe et Harpocrate ou le défi littéraire de la musique / Jean-Louis Cupers
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Sommario/riassunto	Projetant des lumières sur les rapports qui peuvent être établis entre la création littéraire et l'art jumeau des sons, sur leurs similitudes et leurs dissemblances, surtout dans l'épineuse question de la transposition des formes de l'un dans l'autre, Euterpe et Harpocrate ou le défi littéraire de la musique vient à son heure livrer au public francophone les questions posées - et les résultats obtenus - par les recherches les plus récentes dans le domaine de la comparaison littérature-musique. L'auteur y ajoute une réflexion personnelle, originale et pertinente.