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| | Nota di contenuto | Cover; Title Page; Contents; Introduction; Chapter 1. The Loop-shaping Approach; 1.1. Principle of the method; 1.1.1. Introduction; 1.1.2. Sensitivity functions; 1.1.3. Declination of performance objectives; 1.1.4. Declination of the robustness objectives; 1.2. Generalized phase and gain margins; 1.2.1. Phase and gain margins at the model's output; 1.2.2. Phase and gain margins at the model's input:; 1.3. Limitations inherent to bandwidth; 1.4. Examples; 1.4.1. Example 1: sinusoidal disturbance rejection; 1.4.2. Example 2: reference tracking and friction rejection |
| | | 2.2.1. Taking account of modeling uncertainties2.2.2. Stability robustness for a coprime factor plant description; 2.2.3. Property of the equivalent "weighted mixed sensitivity" form; 2.2.4. Expression of the synthesis criterion in "4-blocks" equivalent form; 2.3. Explicit solution of the problem of robust stabilization of coprime factor plant descriptions; 2.3.1. Expression of the prob; 2.3.2. Explicit resolution of the robust stabilization problem; 2.4. Robustness and u-gap; 2.4.1. u-gap and ball of plants; 2.4.2. Robustness results associated with the u-gap |
| | | 3.2. Two-step approach3.2.1. General formulation; 3.2.2. Simplification of the problem by the Youla parameterization; 3.2.3. Extension; 3.2.4. Setting of the weighting functions; 3.2.5. Associated performance robustness result; 3.3. One-step approach; 3.3.1. General formulation; 3.3.2. Expression of the problem by Youla parameterization; 3.3.3. |

| | Associated performance robustness result; 3.3.4. Connection between the approach and loop-shaping synthesis; 3.4. Comparison of the two approaches; 3.5. Example; 3.5.1. Optimization of an existing controller (continued) - scanning<br>3.6. Compensation for a measurable disturbance at the model's output |
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| <span style="color:#8B0033">Sommario/riassunto</span> | The loop-shaping approach consists of obtaining a specification in relation to the open loop of the control from specifications regarding various closed loop transfers, because it is easier to work on a single transfer (in addition to the open loop) than on a multitude of transfers (various loopings such as set point/error, disturbance/error, disturbance/control, etc.). The simplicity and flexibility of the approach make it very well adapted to the industrial context.This book presents the loop-shaping approach in its entirety, starting with the declension of high-level specifications |