Preface

"Condita descrescit, vulgata scientia crescit."

My goal in this book is to share the benefits of TP model transformation-based solutions uncovered through work in my laboratory and to share some of our experiences in control design. I hope the frameworks introduced in the book will help to radically decrease the amount of analytical work that is performed, often unnecessarily, by researchers and engineers working in the field of control design optimization. If our experience can serve as any basis for generalization, many existing analytical approaches can be substituted by more flexible and effective numerical methods.

The TP model transformation-based frameworks provide a simple, generic, and flexible way to interface between identification stages and, primarily, linear matrix inequality-based control design theories. Further, they support stability verification purposes in general, even in cases where identification and design are based on very different representations. Finally, the presented frameworks lay the foundations for convex hull manipulation-based control design optimization.

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