
Preface

It is often true that a book is developed through a long journey that consists of many tiny steps and interactions with many people. This book started in July 2004 when we, Hugues Garnier and Liuping Wang, met for the first time during the fifth Asian Control Conference in Melbourne. We decided to organise an invited session on continuous-time system identification for the 16th World IFAC Congress in Prague (2005). The invitation was first presented to Professor Graham Goodwin, and was accepted without any hesitation. Our invited session in Prague was successful, with support and contributions from Professors Lennart Ljung, Torsten Söderström, Graham Goodwin, Peter Young, Peter Gawthrop, Tomas McKelvey, Johan Schoukens and Rik Pintelon. The special session was well received. From the World Congress, we then decided to organise another three invited sessions for the IFAC Symposium on System Identification (SYSID'2006) in Newcastle, with the same authors from the World IFAC Congress, in which one was devoted to theoretical study and algorithmic development and one was devoted to application of continuous-time system identification. The majority of the authors in this monograph were the contributors to the invited sessions.

Although a broad overview of the different techniques available for direct continuous-time model identification has been given in the books by Unbehauen and Rao (1987) [1] and Sinha and Rao (1991) [2], more than fifteen years has passed since the publication of the last book on continuous-time system identification. Interest in continuous-time approaches to system identification has indeed been growing in the last ten years. Apart from the joint activities in organising the more recent invited sessions, the first editor (Hugues Garnier) has organised invited sessions for the 5th European Control Conference (ECC'1999) in Karlsruhe, for the 15th World IFAC Congress in Barcelona (2002) and for the SYSID'2003 Symposium in Rotterdam. The large number of publications in recent years reflects the intensive effort devoted to the development of theory, software, and applications of these techniques. We felt

that it was time to reflect on the recent development of this area. Thereby arose our intention of editing this book with the contributors who have been working with us for the past many years.

It has been a privilege for us to have the opportunity to work with them. Our thanks go to all the contributors of this book who have supported us over the years. Indeed, both of us enjoyed the time we spent interacting with the contributors and editing this book. Our special gratitude goes to our friends Professor Graham Goodwin and Professor Peter Young who have guided us in various aspects of our careers.

Finally, but not least, we give deepest gratitude to our families: Liuping's husband (Jianshe) and son (Robin); Hugues's wife (Nathalie) and children (Elliot, Victoria and Marie-Sarah) for their endless understanding, caring, patience and support.

It is to them all that we dedicate this book.

Nancy, France and Melbourne, Australia
March 2007

Hugues Garnier
Liuping Wang

References

1. H. Unbehauen and G.P. Rao. *Identification of Continuous Systems*. North-Holland, Systems and Control Series, Amsterdam, 1987.
2. N.K. Sinha and G.P. Rao (eds). *Identification of Continuous-time Systems. Methodology and Computer Implementation*. Kluwer Academic Publishers, Dordrecht, 1991.