

# **THE EIGHT-AUTHOR BOOK AND MARIE-ANTOINETTE POUBELLE**

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*Adaptive optimal control: The thinking man's GPC,*  
R. R. Bitmead, M. Gevers, and V. Wertz, Prentice Hall, 1990.

*Stability of adaptive systems: Passivity and averaging analysis,*  
B.D.O. Anderson, R.R. Bitmead, C.R. Johnson Jr., P. V. Kokotovic, R. L. Kosut,  
I. M. Y. Mareels, L. Praly, and B. D. Riedle, MIT Press, 1986.

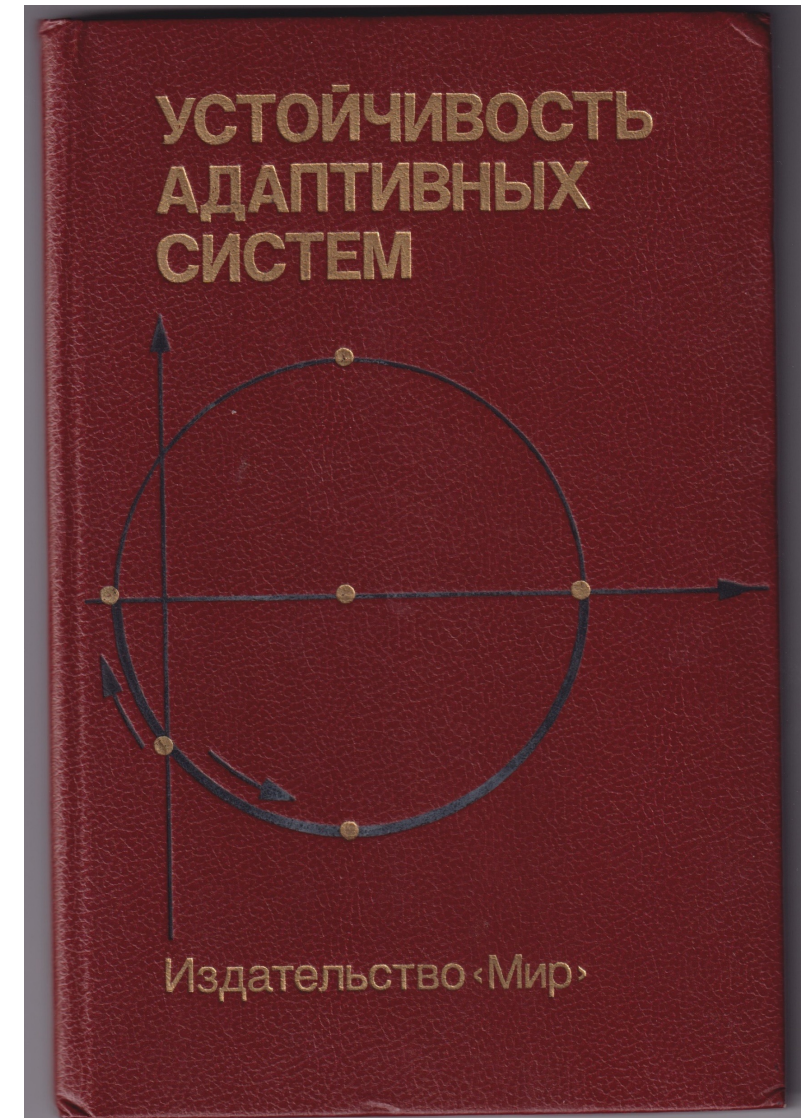
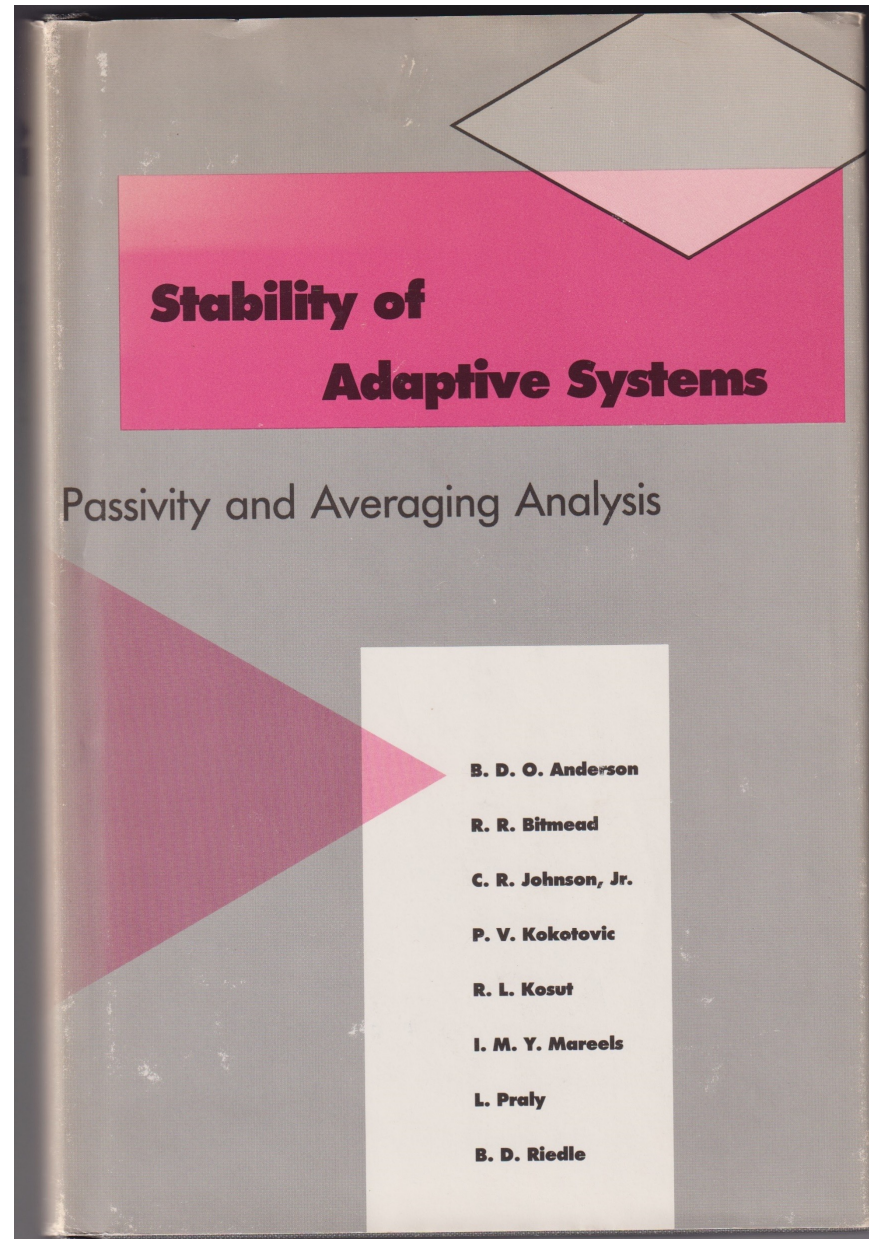
“Asymptotically fast solution of Toeplitz and related systems of linear equations,”  
R. R. Bitmead and B. D. O. Anderson, *Linear Algebra and its Applications*, 1980.

“Greatest common divisor via generalized Sylvester and Bezout matrices,”  
R. R. Bitmead, S. Y. Kung, B. D. O. Anderson, and T. Kailath  
*IEEE Transactions on Automatic Control*, 1978.

“Iterative weighted least-squares identification and weighted LQG control design  
Z. Zang, R. R. Bitmead, and M. Gevers, *Automatica*, 1995.

Left: 8-author book

Right: Russian translation



## **The Genesis of the Eight-Author Book**

In 1978, the global convergence of adaptive control algorithms had been proven under ideal conditions. Attention turned to the robustness of these algorithms in pragmatic, non-ideal conditions. The race was on to consider the theoretical conditions on the problem statement that could be relaxed while desired convergence behavior was retained.

The competition was fierce. Commenting during conference presentations and anonymously reviewing journal submissions by “competitors” became a blood sport.

An Australian team was formed (Anderson, Bitmead, Johnson, and Kosut) to consider the relaxation of a key assumption (the SPR condition) and imposition of a condition on the system input (persistent excitation).

Papers at the 21<sup>st</sup> IEEE Conference on Decision and Control held in Orlando, FL in 1982 and the 22<sup>nd</sup> IEEE Conference on Decision and Control held in San Antonio in 1983 showcased a diversity of approaches.

A workshop was held at Montana State University in August 1984 that gathered participants following different approaches.

The unique format of the workshop was to give speakers an open time slot to present their work until questions from the audience were exhausted.

The decision was made to gather the approaches of the Australian team and the University of Illinois team into a book, thereby bypassing the time needed for a journal submission's editorial review and revision process with its typical push for compression of explanations and illustrative examples, which inhibits the clear presentation of novel approaches.

The eight-author book (published in 1986) remains a touchstone in the area of robust adaptive systems theory with 40 or more citations per year from 1988 to 1993 and double digits every year since (except 2021).

[Google Scholar Citations: 893]





Left to Right:

Brian Anderson

Petar Kokotovic

Rick Johnson

Robert Kosut

Brad Riedle

Bob Bitmead

Laurent Praly

[Iven Mareels]

## The Emergence, Demise, and Legacy of Marie-Antoinette Poubelle

M.-A. Poubelle, I. Petersen, M. Gevers, and R. R. Bitmead, “A miscellany of results of an equation of Count JF Riccati,” *IEEE Transactions on Automatic Control*, 1986.

[Google Scholar citations: 60]

“M.-A. Poubelle is with the Department of Systems Engineering, Research School of Physical Sciences, Australian National University, Canberra, Australia, on leave from DGSE.

... The first author would like to thank D. Williamson, who gave her a clever clue for proving Theorem 1. She also thanks the New Zealand government for extending her stay in the Southern Hemisphere.”

R. R. Bitmead and C. R. Johnson, Jr., “Discrete Averaging Principles and Robust Adaptive Identification” in *Control and Dynamic Systems: Advances in Theory and Applications*, Academic Press, 1987.

[Google Scholar Citations: 29]

“Finally, we thank Marie-Antoinette Poubelle for dealing with the illustrations.”

I. M. Y. Mareels, R. R. Bitmead, M. R. Gevers, C. R. Johnson, Jr., R. L. Kosut, and M.-A. Poubelle, “How exciting can a Signal Really Be?,” *Systems and Control Letters*, 1987.

[Google Scholar Citations: 62]

Prior to acceptance of this article, a request was received from the editor for documentation regarding the 5<sup>th</sup> author – preferably the photo page from her passport.



The only known photograph of  
Marie-Antoinette Poubelle



The last publication of Marie-Antoinette Poubelle ...

M.-A. Poubelle, R. R. Bitmead, and M. R. Gevers, “Fake Algebraic Ricatti Techniques and Stability,” *IEEE Transactions on Automatic Control*, 1988.

[Google Scholar Citations: 106]

Following the untimely demise of Marie-Antoinette Poubelle, her legacy influenced the publication efforts of A. Maylar Baksho while at the University of Iowa.

S. Dasgupta, C. R. Johnson, Jr., and A. M Baksho, "Sign-Sign LMS Convergence with Independent Stochastic Inputs," *IEEE Transactions on Information Theory*, June 1990.  
[Google Scholar Citations: 63]

A. M. Baksho, S. Dasgupta, J. S. Garnett, and C. R. Johnson, Jr., "On the Similarity of Conditions for an Open-eye Channel and for Signed Filtered Error Adaptive Filter Stability," *Proc. 30<sup>th</sup> IEEE Conference on Decision and Control*, 1991.  
[Google Scholar Citations: 9]

S. Dasgupta, C. R. Johnson, Jr., and A. M. Baksho, “Characterizing Persistent Excitation for the Sign-Sign Equation Error Identifier,” *Automatica*, 1993.

[Google Scholar Citations: 26]

“The third author wishes to thank his defacto, Marie Antoinette Poubelle, for having been an unending source of inspiration and ideas. In fact he believes that, without her, this paper simply would not have been possible.”

“A. Maylar Bakso was born in Andher Nagri, India. He received his Ph.D. in Electrical Engineering from the Ghorar Deem University under the supervision of Professor Takai Hijbajibij. In 1982, he was awarded the Murkhadhiraj award by the Indian Society of Kablakantos. He currently edits the Bengali engineering journal, Abol Tabol Hajobarolo, which published his seminal paper, 'Kager bashay bauker deem'. Dr Baksho has held visiting appointments in a number of prominent Universities, but finds it difficult to hold a steady job. Even though he has contributed breakthrough ideas to a number of areas such as fuzzy sets, intelligent control, artificial intelligence and fault tolerant computing, he publishes only on the convergence of signed algorithms.”



The last publication of A. Mylar Baksho ...

S. Dasgupta, C. R. Johnson, Jr., and A. M. Baksho, "The Sign-Sign Algorithm: Checking Persistent Excitation for Periodic Inputs," *Proceedings of the 12<sup>th</sup> Triennial World Congress of the International Federation of Automatic Control*, July 1993.

[Google Scholar Citations: 0]