Wiener-Hammerstein Model Identification-Recursive Algorithms

Emara-Shabaik, HE; Ahmed, MS; Al-Ajmi, KH

JAPAN SOC MECHANICAL ENGINEERS, JSME INTERNATIONAL JOURNAL SERIES C-MECHANICAL SYSTEMS MACHINE ELEMENTS AND MANUFACTURING; pp: 606-613; Vol: 45

King Fahd University of Petroleum & Minerals

http://www.kfupm.edu.sa

Summary

Recursive algorithms for parameter estimation of Wiener-Hammerstein (W-H) models are developed. These algorithms are derived on the basis of minimizing cost functions of the output errors, the equation errors, and the prediction errors. Convergence conditions of the developed algorithms are established. Numerical results, to test the algorithms and illustrate their estimation accuracy, are given.

References:

1. BENDAT JS, 1990, NONLINEAR SYSTEM ANA
2. BILLINGS SA, 1980, INT J SYST SCI, V11, P261
3. BOUTAYEB M, 1995, IEEE T AUTOMAT CONTR, V40, P287
4. CHEN CH, 1997, P AM CONTR C ALB NEW
5. EMARASHABAIK HE, 2001, JSME INT J C-MECH SY, V44, P118
6. ESKINAT E, 1991, AICHE J, V37, P255
7. GOODWIN GC, 1984, ADAPTIVE FILTERING P
8. HABER R, 1990, AUTOMATICA, V26, P651
9. KALAFATIS AD, 1997, INT J CONTROL, V66, P923
10. KEARNEY RE, 1997, IEEE T BIO-MED ENG, V44, P493
11. KORENBERG MJ, 1991, ANN BIOMED ENG, V19, P429
12. LEONTARITIS IJ, 1987, INT J SYST SCI, V18, P189
13. LIUNG L, 1983, THEORY PRACTICE RECU
14. PALM G, 1979, BIOL CYBERN, V34, P49
15. SODERSTROM T, 1989, SYSTEM IDENTIFICATIO
16. VANDERSTEEN G, 1997, AUTOMATICA, V33, P1351
17. YOSHINE K, 1992, INT J SYST SCI, V23, P261

For pre-prints please write to: abstracts@kfupm.edu.sa