

# **Structure Identification Of A Class Of Non-Linear Systems Using Correlation And Bispectrum Approaches**

Emara-Shabaik, H.E. Moustafa, K.A.F. Talaq, J.H.S.; Dept. of Syst. Eng., King Fahd Univ. of Pet. & Miner., Dhahran, Saudi Arabia;

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King Fahd University of Petroleum & Minerals

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## **Summary**

The class of nonlinear systems studied in this paper is assumed to be modeled by block-cascades. Such cascades are composed of a dynamic linear block (L) in cascade with a zero-memory nonlinear block (N) followed by another dynamic linear block (L). This class of models is extensively used to represent nonlinear dynamic systems and is known in the literature as Wiener-Hammerstein models. Using a zero-mean stationary white Gaussian process as an input to such models, a structure identification criterion is developed based on the bispectrum and bicoherence of the output sequence only. A comparison between the developed criterion and other cross-correlation based criterion is given.

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