

# Nonlinear System Identification Using Volterra Filters

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## Abstract

*This paper presents a method for nonlinear system identification using Volterra filters and the NLMS adaptation algorithm. The implementation of the nonlinear system was made using a third-order polynomial structure with variable factors. In order to create the nonlinear system output replica, a second order Volterra filter was built, based on the NLMS adaptation algorithm. Simulation results show that the second order adaptive Volterra filter is reliable in weakly nonlinear systems.*