Parameter Estimation of Parallel Wiener-Hammerstein Systems by Decoupling their Volterra Representations

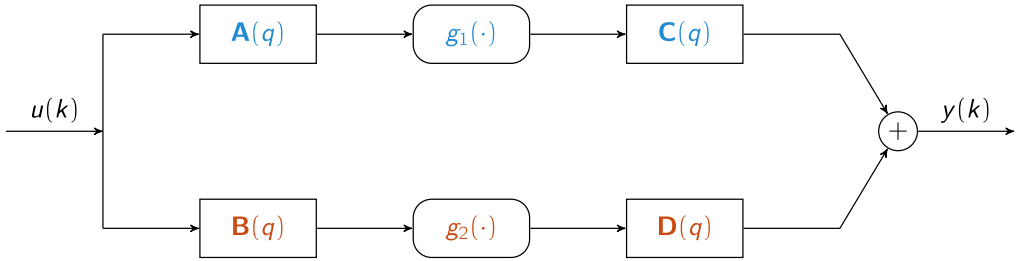
Philippe Dreesen KU Leuven, Dept. Electrical Engineering, ESAT-STADIUS
Mariya Ishteva KU Leuven, Dept. Computer Science, ADVISE-NUMA

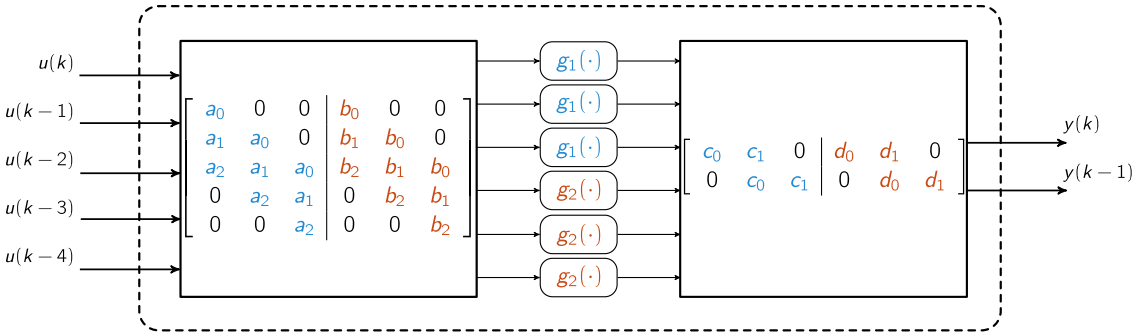
nonlinear sysid using Volterra series
captures NL but lacks interpretation

establish a link between the Volterra model
and the (parallel) Wiener-Hammerstein model

(constrained) decoupling the model
with (block-)Toeplitz structured factors
and identical internal functions
to reveal (p)WH structure

uniqueness of tensor decomposition
hints at global parameter identifiability





KU LEUVEN erc European Research Council