Online Optimization with  $\boldsymbol{b}_k$  = constant and time-varying Hessian Online gradient 10<sup>2</sup> Control-based Sys ID ARX Control-based Baseline  $10^{1}$ Tracking error 10<sup>0</sup>  $10^{-1}$ 10-2  $10^{-3}$  $10^{-4}$ 100 200 400 500 300 Time