This supplementary numerical analysis aims to further illustrate the sensitivity of the proposed iterative algorithm with respect to the scalar parameters β and δ. To this end, simulations were conducted for 12 logarithmically spaced values of β in the interval $[1, 100]$ and 12 logarithmically spaced values of δ in the interval $[10^{-6}, 10^{-5}]$, resulting in a total of 144 parameter combinations. For each simulation scenario, the algorithm was executed for all considered cases (Case I, Case II, and Case III) and for each admissible filter order $n_f \in \{4, 3, 2, 1\}$, using the same convergence tolerance $\varepsilon = 1 \times 10^{-3}$ and maximum number of iterations $\kappa_{\max} = 100$. The results are reported in Table 1, where, for each configuration, the guaranteed cost (γ^*) and the number of iterations (n_κ) are summarized using the format "average±standard deviation" computed over the corresponding set of simulations. Although the number of iterations is an integer-valued quantity, its average and standard deviation are reported as real-valued statistics, rounded to one decimal place.

Table 1: Guaranteed cost (γ^*) and number of iterations (n_κ), reported as average (standard deviation), for different values of β and δ, considering filters orders $n_f \in \{4, 3, 2, 1\}$ and Cases I–III.

Filter Order	Case I		Case II		Case III	
	γ^*	n_κ	γ^*	n_κ	γ^*	n_κ
$n_f = 4$	7.2379 (0.0380)	4.7 (1.9)	7.2289 (0.0407)	3.7 (3.2)	7.1652 (0.0000)	1.0 (0.0)
$n_f = 3$	7.2253 (0.0002)	12.3 (1.1)	7.2269 (0.0374)	5.2 (4.0)	7.1652 (0.0000)	1.0 (0.0)
$n_f = 2$	7.2658 (0.0001)	2.3 (0.5)	7.2628 (0.0319)	3.6 (1.9)	7.1668 (0.0075)	1.3 (2.1)
$n_f = 1$	7.8071 (0.0000)	4.0 (0.0)	7.7203 (0.0000)	4.0 (0.0)	7.2673 (0.0000)	6.9 (0.2)

This results clarify the role of β and δ in the initialization step and their effect on the convergence behavior of Algorithm 1. The tests with different values of β and δ indicate that these parameters mainly influence the convergence speed: the number of iterations exhibits only moderate variability, while the final guaranteed cost shows very limited dispersion across all tested cases. This confirms that variations in β and δ affect convergence speed rather than the achieved performance level.