$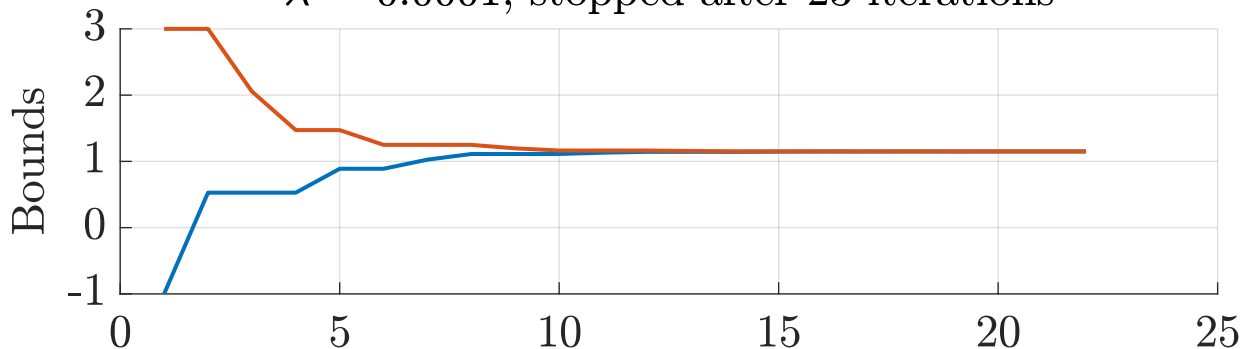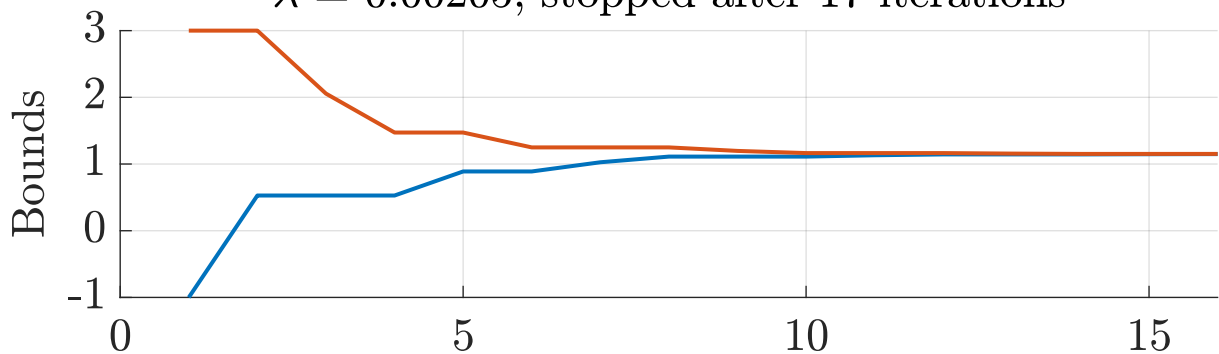f_1$ upper and lower bounds for varying λ