



Figure 1: Contour plot of smooth objective functions  $F_1(\theta) = \frac{1}{2}\|A\theta - b\|_2^2$  and non-smooth objective function  $F_2(\theta) = \|\theta\|_1$  in black and the *regularization path*  $\theta^*(\lambda) \in \operatorname{argmin}_{\theta \in R^n} \frac{1}{2}\|A\theta - b\|_2^2 + \lambda\|\theta\|_1$  in red.