

---

```

1: Step 1:
2: Set  $\theta_0 = \hat{\theta}_{\text{Group Lasso}}$  and  $\hat{\mathcal{P}} = \hat{S}_{\hat{f}_{\text{Group Lasso}}}$ 
3: repeat
4:   Calculate  $f_0 = \operatorname{argmin}_{f_0} C(f_0, \theta)$ 
5:   for  $v \in \hat{\mathcal{P}}$  do
6:     Calculate  $R_v = Y - f_0 - \sum_{v \neq w} K_w \theta_w$ 
7:     Solve  $J^* = \operatorname{argmin}_{\hat{t}_v \in \mathbb{R}^n} \{J(\hat{t}_v), \text{ such that } \|K_v^{-1/2} \hat{t}_v\| \leq 1\}$ 
8:     if  $J^* \leq \gamma$  then
9:        $\theta_v \leftarrow 0$ 
10:    else
11:       $\theta_v \leftarrow \operatorname{argmin}_{\theta_v} C(f_0, \theta)$ 
12:    end if
13:  end for
14: until convergence
15: Step 2:
16: Implement the same procedure as Step 1 with  $\theta_0 = \hat{\theta}_{\text{old}}$ ,  $\hat{\mathcal{P}} = \mathcal{P} \supset \hat{\theta}_{\text{old}}$  is
    the estimation of  $\theta$  in Step 1.

```

---