Profiles of $\mathbf{u} \mapsto J(\mathbf{k}, \mathbf{u})$ for different estimated $\mathbf{k}$

Legend:
- $\check{\alpha}_1 \cdot J(\mathbf{k}^*(\mathbf{u}), \mathbf{u})$
- $J(\mathbf{k}^*(\mathbf{u}), \mathbf{u})$
- $\mathbf{u} \mapsto J(\mathbf{k}_{\mathrm{var}}, \mathbf{u})$
- $\mathbf{u} \mapsto J(\check{\mathbf{k}}_1, \mathbf{u})$
- $\mathbf{u} \mapsto J(\mathbf{k}_{\mathrm{mean}}, \mathbf{u})$
- $\phi_\alpha < 0$