Convergence of the MLE

Some more theorems about convergence

Continuous mapping theorem:

Slutsky's theorem:

Convergence of the MLE

Intermediate steps

Using results we have previously derived, argue that:

- $\frac{1}{n}\ell_n''(\theta) \xrightarrow{p} -\mathcal{I}_1(\theta)$
- $\frac{1}{\sqrt{n}}\ell_n'(\theta) \xrightarrow{d} N(0, \mathcal{I}_1(\theta))$

Regularity conditions