Lecture 15: Asymptotic normality of the MLE

Some more theorems about convergence

Continuous mapping theorem:

Slutsky's theorem:

Convergence of the MLE

Intermediate steps

Using the WLLN and the CLT, argue that:

- $\frac{1}{n}\ell''_n(\theta) \xrightarrow{p} -I_1(\theta)$
- $\frac{1}{\sqrt{n}}\ell'_n(\theta) \xrightarrow{d} N(0, I_1(\theta))$