Definition 0.0.1. Consider two probability measures $\mathbb{P}$ and $\mathbb{Q}$ defined on $(\Omega, \mathcal{A})$.

- (equivalence) $\mathbb{P}$ and $\mathbb{Q}$ are said to be **equivalent** if

$$\mathbb{P}(A) = 0 \iff \mathbb{Q}(A) = 0$$

for all $A \in \mathcal{A}$; i.e. they have the same set of null events in the σ-algebra $\mathcal{A}$.

- (absolute continuity) $\mathbb{Q}$ is said to be **absolutely continuous** with respect to $\mathbb{P}$, written $\mathbb{Q} \ll \mathbb{P}$, if

$$\mathbb{P}(A) = 0 \implies \mathbb{Q}(A) = 0$$

for all $A \in \mathcal{A}$.