

Definition 3.1 The **field** \mathcal{F}_n generated by sets $\tilde{X}_1, \tilde{X}_2, \dots, \tilde{X}_n$ is the collection of sets which can be obtained by any sequence of usual set operations (union, intersection, complement, and difference) on $\tilde{X}_1, \tilde{X}_2, \dots, \tilde{X}_n$.

Definition 3.2 The **atoms** of \mathcal{F}_n are sets of the form $\cap_{i=1}^n Y_i$, where

$$Y_i = \tilde{X}_i \text{ or } \tilde{X}_i^c.$$