autocovariance function

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Let $\{X_t \mid t \in T\}$ be a stochastic process such that $\mathrm{Var}[X_t] < \infty \ \forall t \in T$. The *autocovariance function* of $\{X_t\}$ is

$$\begin{aligned} \gamma_X(r,s) &:= \mathrm{Cov}(X_r, X_s) \\ &= E\big[(X_r - E[X_r])(X_s - E[X_s])\big] \qquad \forall r, s \in T. \end{aligned}$$