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## discrete white noise

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The stochastic process  $\{Z_t, t \in T\}$ , where  $T$  is the set of natural integers  $\mathbb{N}$  or the set of all integers  $\mathbb{Z}$ , is said to be white noise with mean 0 and variance  $\sigma^2$ , written  $\{Z_t\} \sim WN(0, \sigma^2)$ , if and only if  $\{Z_t\}$  has zero mean and autocovariance function

$$\gamma(h) = \begin{cases} \sigma^2 & \text{if } h = 0 \\ 0 & \text{if } h \neq 0 \end{cases}$$