Let $\{(X(t), Y(t)), -\infty < t < \infty\}$ be a bivariate wide-sense stationary process. Their cross-correlation functions are defined as

$$R_{XY}(\tau) = E[X(t+\tau)Y(t)]$$

and

$$R_{YX}(\tau) = E[Y(t+\tau)X(t)]$$

which do not depend on t. The cross-spectral densities are defined as

$$S_{XY}(f) = \int_{-\infty}^{\infty} R_{XY}(\tau)e^{-j2\pi f\tau}d\tau$$

and

$$S_{YX}(f) = \int_{-\infty}^{\infty} R_{YX}(\tau)e^{-j2\pi f\tau}d\tau$$

i.e.,

$$R_{XY}(\tau) \rightleftharpoons S_{XY}(f)$$

and

$$R_{YX}(\tau) \rightleftharpoons S_{YX}(f).$$