## Cross-correlation-function (CCF)

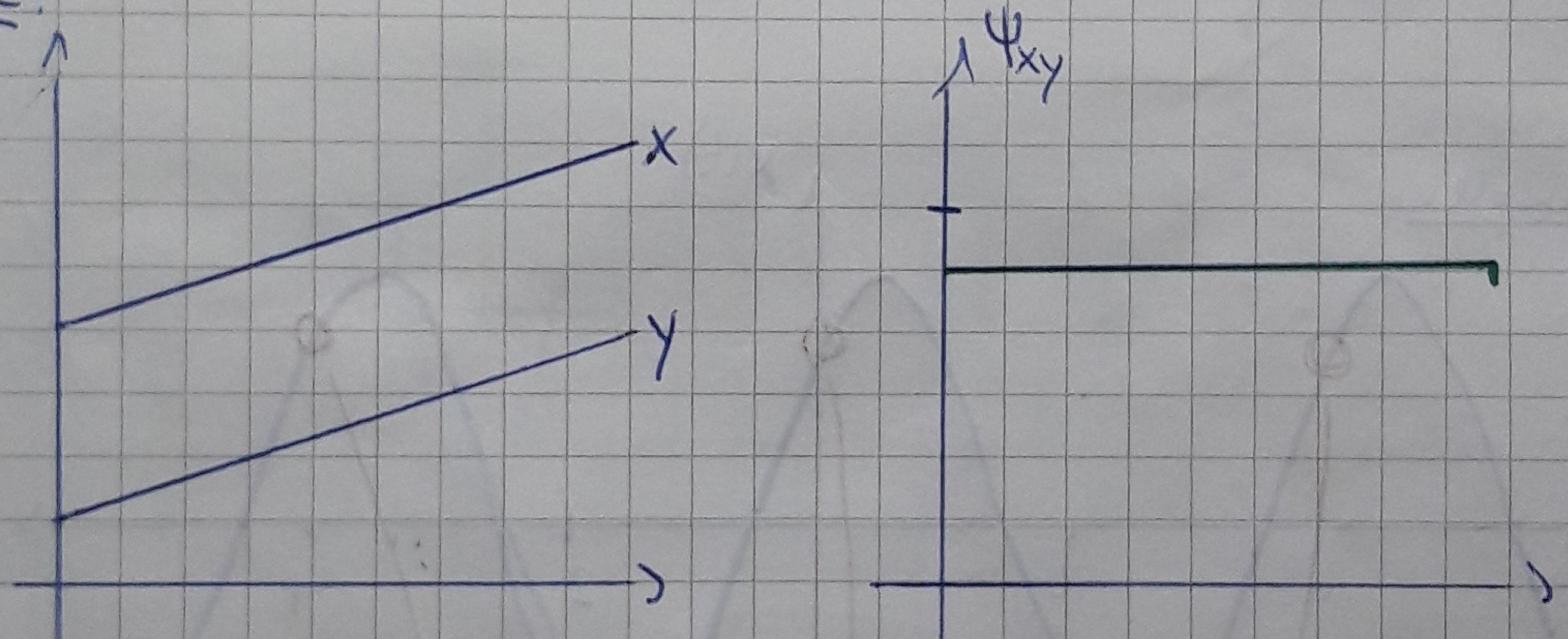
- describes a linear, statistic dependence of two random functions $x(t)$ and $y(t)$ with a time difference $\tau$

$$\Psi_{xy}(\tau) = \lim_{T \to \infty} \frac{1}{T} \int_T x(t)\, y(t+\tau)\, dt = E\{x(t)\, y(t+\tau)\}$$

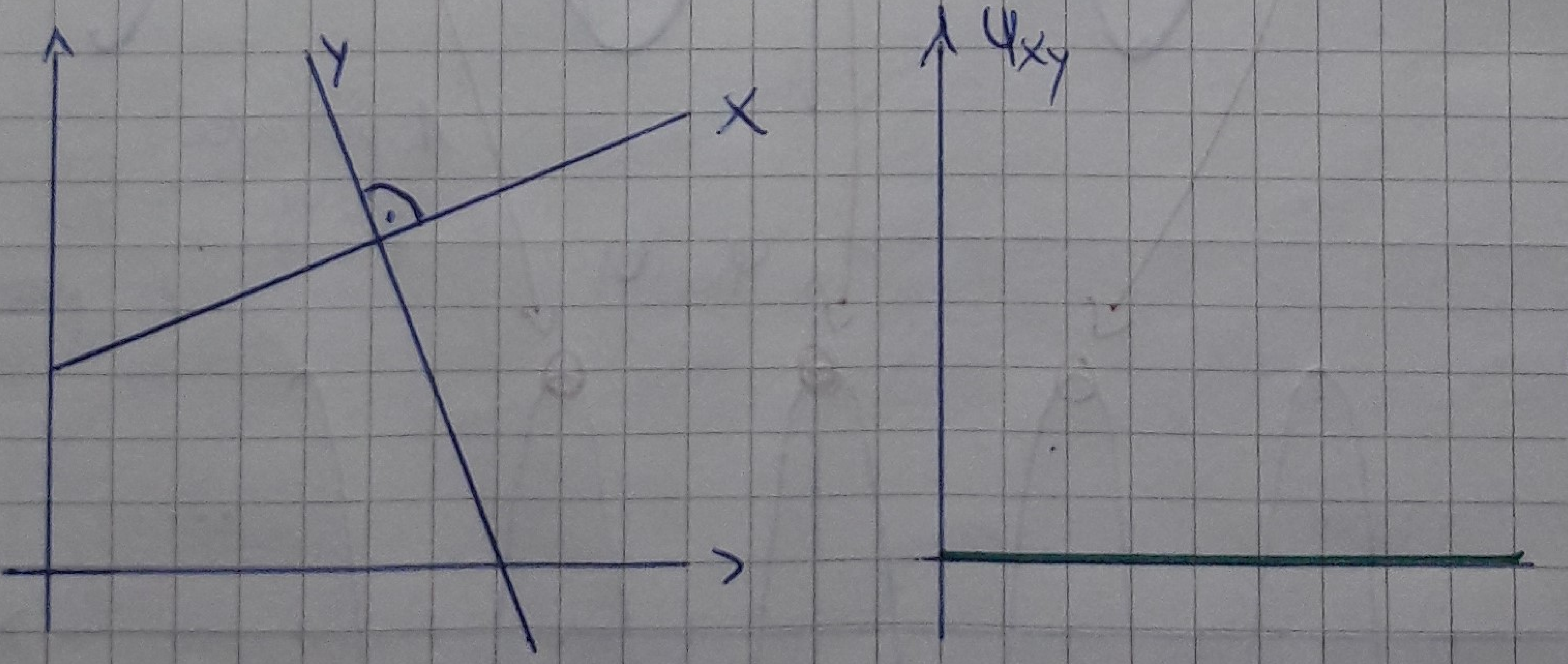
Conditions: $x(t)$ and $y(t)$ has to be stationairy and ergodic

- odd function
- complex power spectral density
- phase information ~~[illegible]~~ doesn't ~~[illegible]~~ disappear

Example:




high correlation




no correlation