Lehmann Statistics → Section 5.4

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Sample correlation

subj 1, tx1

$$Y(s) = \sum_t X(t) K(s,t) \Big/ \sum K(s,t)^2$$

So $Y(s+1) - Y(s) = \sum_t X(t) \left(K(s+1, t) - K(s,t) \right)$

$\Rightarrow \mathbb{E}\left[\left(Y(s+1) - Y(s) \right)^2 \right] = \sum_{u,v} 0$

$$\mathbb{E}\left[\left(Y(s+1) - Y(s) \right)^2 \right] =$$

$$= \left(\sum_u X(u) \left(K(s+1, u) - K(s,u) \right) \right)$$

$$\times \sum_v X(v) \left(K(s+1, v) - K(s,v) \right)$$