

$$\begin{aligned}
\|\mathbf{F}_r\| &= \gamma_1(X^{(0)}, X^{(1)}) = \sup_{h \in L_0^2(\pi), \|h\|=1} \left| Corr \left[h(X^{(0)}), h(X^{(1)}) \right] \right| \\
&= \sup_{h \in L_0^2(\pi), \|h\|=1} \left| Cov \left[h(X^{(0)}), h(X^{(1)}) \right] \right|.
\end{aligned} \tag{1}$$