

Definition 0.0.1. $L_{\mathbb{P}}^2(W)$ denotes the class of all \mathcal{F} -progressively measurable processes γ defined on $(\Omega, \mathcal{F}, \mathbb{P})$ s.t.

$$\|\gamma\|_W^2 := \mathbb{E} \left[\int_0^T |\gamma_u|^2 du \right] < \infty.$$