Definition (Codiagonal function)

Define the *codiagonal function* codiag_{**P**}: $\mathbf{P} + \mathbf{P} \rightarrow \mathbf{P}$:

$$\operatorname{codiag}_{\mathbf{P}}: \mathbf{P} + \mathbf{P} \to \mathbf{P},$$

$$\operatorname{codiag}_{\mathbf{P}} \colon \mathbf{P} + \mathbf{P} \to \mathbf{P},$$
$$\langle 1, p \rangle \mapsto p,$$

 $\langle 2, p \rangle \mapsto p$.