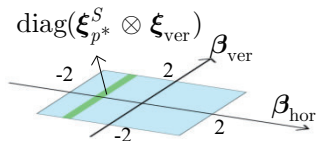
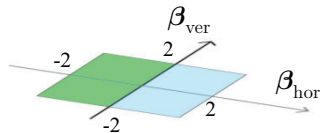


Stage 1



Repeat the choosing process until  $\xi_{p^*}^S$  is chosen

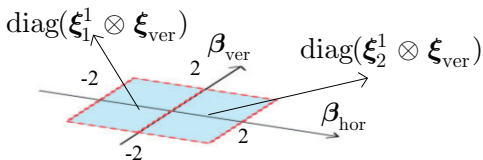


Choose the best code

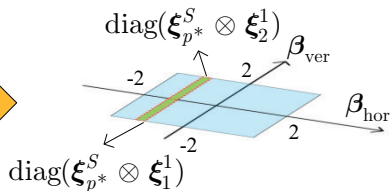


$$\Phi_{p,0} = \text{diag}(\xi_p^s \otimes \xi_{\text{ver}})$$

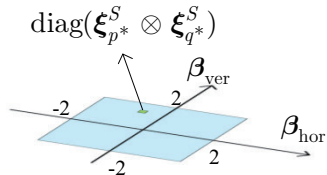
$$p^* = \arg \max_p d^H \Phi_{p,0} \mathbf{a}$$



Stage 2



Repeat the choosing process until  $\xi_{q^*}^S$  is chosen



Result:  $\Phi_{\text{best}} = \text{diag}(\xi_{p^*}^S \otimes \xi_{q^*}^S)$