

# Eaptpqq

Loris Jautakas

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## 1 Introduction

This note gives a summary of the entanglement assisted communication over a quantum channel.

### Definition 1: /weyl\_operators

Let  $\mathcal{H}$  be a Hilbert space of dimension  $d$ . The Weyl operators  $X_x$  and  $Z_z$  are defined as:

$$X_x \stackrel{\text{def}}{=} \sum_{j=0}^{d-1} |j+x\rangle\langle j| \quad (1)$$

$$Z_z \stackrel{\text{def}}{=} \sum_{j=0}^{d-1} \omega^{jz} |j\rangle\langle j| \quad (2)$$

$$W_{x,z} \stackrel{\text{def}}{=} X_x Z_z \quad (3)$$