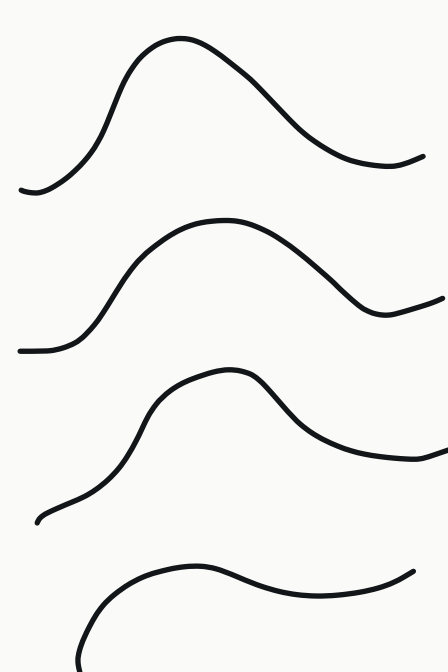


$$\sum_i \alpha_j \neq 0 \text{ (mod } 2\pi \text{ ?)}$$

then error is detectable

$$\sum_j x_j$$

$\begin{array}{ccccccc} x & & x & & x & & x \\ \bullet & \circ & \bullet & \circ & \bullet & \circ & \bullet \\ \rho^{-\frac{x^2}{2}} & & & & & & \end{array}$



A diagram showing a vertex (a black dot) with two outgoing lines. The top line is labeled χ_{χ_3} and the bottom line is labeled χ_{χ_2} . The vertex is connected to a horizontal line on the left.

$$\sum_j x$$

✓

$$\Sigma_{DC}$$


weight

Possible defn. of distance of set of errors (i.e. multiple wires)

For a non-trivial, undetectable set of errors $\left\{ \frac{x_{ij}}{0} \right\}_i$, define: /

⑦ $\sum_j x_j =: w$ ~~\times~~ ($w = \text{weight}$)

② $\min_j |x_j| =: w$ \times



Desiderata?

- Ⓐ agree with GKP literature
- Ⓑ $\text{---} = \text{---} \circ \text{---} = \text{---} \bullet \text{---}$ should be distance preserving.
- Ⓒ Make sense on a single edge
- Ⓓ Doesn't require probabilities?

Could be minimum over all equivalent diagrams, e.g.

A diagram showing a central vertex (a black dot) with multiple outgoing lines. The top line is labeled x_r and the bottom line is labeled x_c . There are vertical dots between these two lines, indicating more lines. A large curved line is on the left side of the vertex.

$$\omega \left(\begin{array}{c} x_x \\ \bigcirc \end{array} \right)$$

$$\sum x = n$$

↓
"base"
diagram
kept the
same, only
errors moved
around