Algorithm 1 Vertex operations

procedure AddVertex(H, v)
    Let G_τ be obtained from $G_{\tau-1}$ by adding v.
    for each $e_{st} \in E(H)$ **do**
        continue with probability $|V_{\tau-1}|^2/|V_\tau|^2$.
        Sample $(s', t') \in (V_\tau \times V_\tau) \setminus (V_{\tau-1} \times V_{\tau-1})$.
        Replace e_{st} by the hyperedge $e_{s't'}$ made from (s', t').

procedure RemoveVertex(H, v)
    Let G_τ be obtained from $G_{\tau-1}$ by deleting v.
    for each $e_{st} \in E(H)$ **do**
        if $s \neq v$ and $t \neq v$ **then continue**.
        Sample $(s', t') \in V_\tau \times V_\tau$ uniformly at random.
        Replace e_{st} by the hyperedge $e_{s't'}$ made from (s', t').