

$$\sigma_{i+1}^{-1}(V(\mathcal{K}^\ell)) \not\subseteq V(\mathcal{P}_a^\ell) \cup V(\mathcal{P}_b^\ell) \text{ and } |\{\sigma_{i+1}(v_a^\ell), \sigma_{i+1}(v_b^\ell)\} \cap V(\mathcal{K}^\ell)\} \leq 1.$$