a **Deleted Edge Consistency C Overview of GNNDELETE** Deleted Node edge e_{uv} GNN **GNN** layer **GNN** layer Edge layer Edge to delete $\phi(\mathbf{h}'_u, \mathbf{h}'_v) - \phi(\mathbf{h}_p, \mathbf{h}_q) = \delta$ Unconnected Representation node pairs before deletion Representation (N_p) after deletion Vector operation b Neighborhood Influence Message → Aggregation → Update → Activation → Deletion passing S_{uv}^1 Before $\psi(| | | | |)$ deletion: Freezed model parameters W_D After deletion: $\psi()$ Learnable deletion operator $W_D = \arg\min_{W_D} \lambda L_{DEC} + (1 - \lambda) L_{NI}$