

Input: Graph $G(V, E)$ and edge update stream E_S

Output: $VBC'[V']$ and $EBC'[E']$ for updated $G'(V', E')$

Step 1: Execute Brandes' alg. on G to create & store data structures for incremental betweenness.

Step 2: **For each** update $e \in E_S$, execute Algorithm 1.

Step 2.1 Update vertex and edge betweenness.

Step 2.2 Update data structures in memory or disk for next edge addition or removal.