core number by edge addition ✓ or use Δc. more straight forward

$c(\{e_1 \cdots e_k\})$ core number after adding $c(\{e_1 \cdots e_k\})$

edge set until i as $E'[\cdot : i]$

Given graph G, edge list $E' = [e_1, e_2, \cdots e_k]$

a promoting ~~node~~ edge set $P = \{e_{p_1}, e \cdots e_{p_k}\}$ is

1. $p_i < p_{i+1},\ i = 1 \cdots k-1$ $\quad C(E'[1:p_i]) \neq C(E'[1:p_i-1])$ ← adding p_i does change core number.

2. ~~for each $i = 1 \cdots k-1$ adding $\{e_1 \cdots e_{p_i}\}$ and $\{e_1 \cdots e_{p_k}\}$ gives the same~~

3. $C(E'[1:p_k]) \neq C(E'[1:p_k] - P)$ ← adding P changes core.

promoting edge set

Given $P_b = \{e_{p_1} \cdots e_{p_k}\}$ and $Q = \{e_{q_1} \cdots e_{q_l}\}$ and $p_k < q_l$. P promotes earlier than Q

we say Q is dependent on P if. ~~$c(E[1:q_l] - P) \neq c(E[1:q_l])$~~

removing P affects Q's promoting nodes

Dependency among promoting edge set

$c(E[1:q_l]) - c(E[1:q_l-1]) \neq c(E[1:q_l] - P) - c(E[1:q_l-1] - P)$

Δc by Q $\qquad$ Δc by Q without P

$\Delta(E[1:q_l], E[1:q_l-1])$

$\neq \Delta(E[1:q_l] - P), E[1:q_l-1] - P])$ ~~How to cal~~ How to capture Q