
Best Balanced Shortest Paths

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1 Pseudocode

Algorithm 1 Best Balanced Shortest Paths

Require: $G(V,E)$ and source s and destination d nodes

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1:  $H \leftarrow 2$ 
2:  $pair \leftarrow nil$ 
3: while  $H \leq MAX_{hops}$  do
4:    $PATHS \leftarrow ModifiedIncrementalDFS(G, s, d, H)$ 
5:   if size of  $PATHS \geq 2$  then
6:     sort  $PATHS$  by the number of hops.
7:      $hops \leftarrow MAX_{hops} + 1$ ;  $diff \leftarrow MAX_{hops}$ 
8:     for each pair of paths  $p$  from  $PATHS$  do
9:        $h \leftarrow$  sum number of hops from  $p$ 
10:       $d \leftarrow$  difference in hops of paths in  $p$ 
11:      if  $p$  is link-disjoint and  $h < hops$  then
12:         $hops \leftarrow h$ ,  $diff \leftarrow d$ 
13:         $pair \leftarrow p$ 
14:      else if  $p$  is link-disjoint and  $h \equiv hops$  then
15:        if  $d < diff$  then
16:           $hops \leftarrow h$ ,  $diff \leftarrow d$ 
17:           $pair \leftarrow p$ 
18:        end if
19:      end if
20:    end for
21:    if  $pair$  then
22:      return  $pair$ 
23:    end if
24:  end if
25:   $H \leftarrow H + 1$ 
26: end while
27: return  $pair$ 

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