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

$H \longleftarrow 2$
$pair \longleftarrow nil$
while $H \leqslant MAX_{hops}$ **do**
  $PATHS \longleftarrow ModifiedIncrementalDFS(G,s,d,H)$
  if size of $PATHS \geqslant 2$ **then**
    sort $PATHS$ by the number of hops.
    $hops \longleftarrow MAX_{hops} + 1$; $diff \longleftarrow MAX_{hops}$
    for each pair of paths p from $PATHS$ **do**
      $h \longleftarrow$ sum number of hops from p
      $d \longleftarrow$ difference in hops of paths in p
      if p is link-disjoint and $h < hops$ **then**
        $hops \longleftarrow h$, $diff \longleftarrow d$
        $pair \longleftarrow p$
      else if p is link-disjoint and $h = hops$ **then**
        if $d < diff$ **then**
          $hops \longleftarrow h$, $diff \longleftarrow d$
          $pair \longleftarrow p$
        end if
      end if
    end for
    if $pair$ **then**
      return $pair$
    end if
  end if
  $H \longleftarrow H + 1$
end while
return $pair$