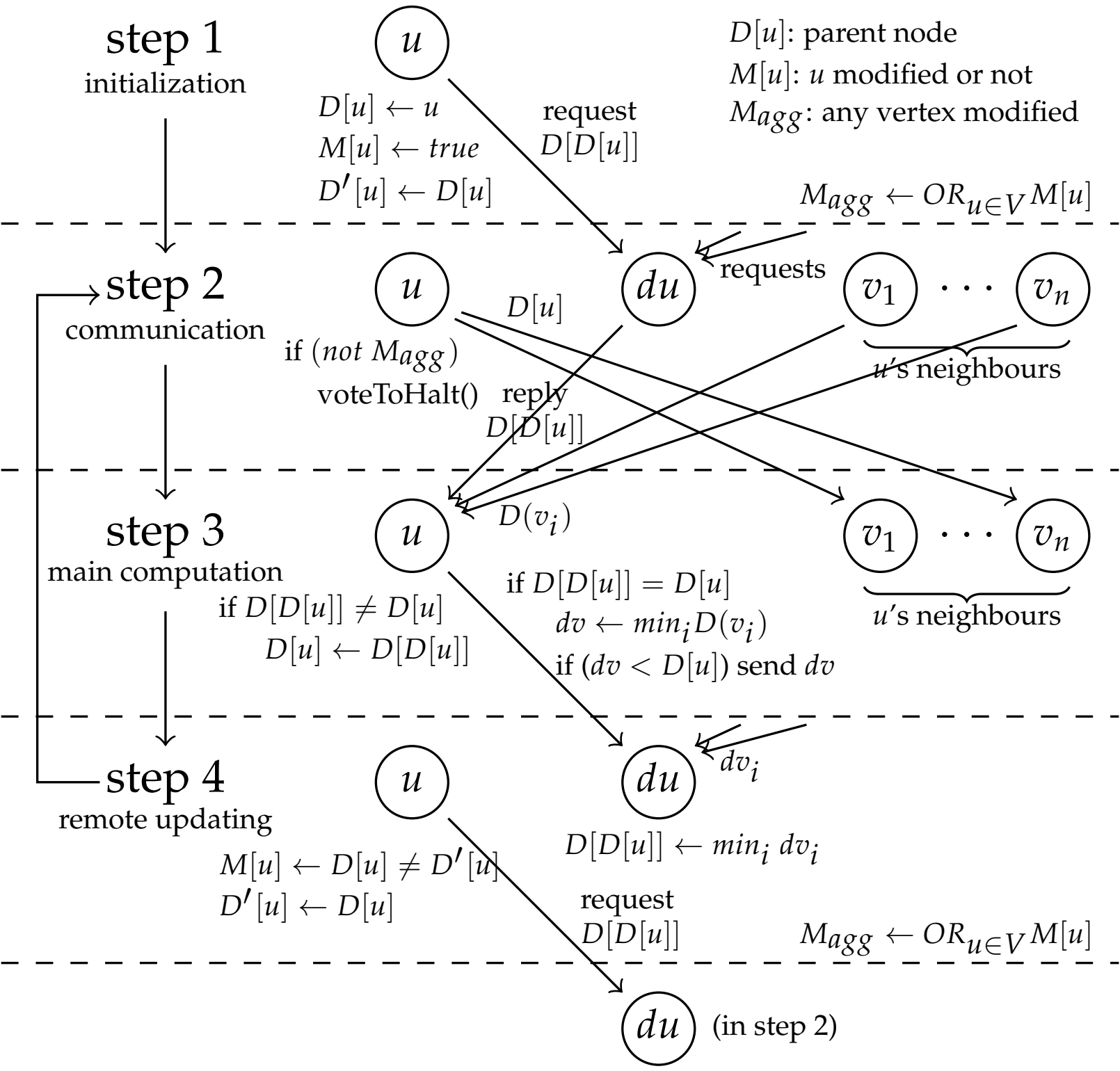
step 1
initialization
u
$D[u]$: parent node
$M[u]$: u modified or not
M_{agg}: any vertex modified
$D[u] \leftarrow u$
$M[u] \leftarrow true$
$D'[u] \leftarrow D[u]$
request
$D[D[u]]$
$M_{agg} \leftarrow OR_{u \in V} M[u]$
step 2
communication
u
du
requests
v_1 $\cdots$ v_n
$D[u]$
if $(not\ M_{agg})$
voteToHalt()
reply
$D[D[u]]$
u's neighbours
step 3
main computation
u
$D(v_i)$
v_1 $\cdots$ v_n
if $D[D[u]] \neq D[u]$
$D[u] \leftarrow D[D[u]]$
if $D[D[u]] = D[u]$
$dv \leftarrow min_i D(v_i)$
if $(dv < D[u])$ send dv
u's neighbours
step 4
remote updating
u
du
dv_i
$D[D[u]] \leftarrow min_i\ dv_i$
$M[u] \leftarrow D[u] \neq D'[u]$
$D'[u] \leftarrow D[u]$
request
$D[D[u]]$
$M_{agg} \leftarrow OR_{u \in V} M[u]$
du
(in step 2)