

FUNCTION  $iLCD( T_e, )$  :

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0:FOR EACH  $(i,j,a,t) \in T_e$ 
1:    $MC \leftarrow \emptyset$  //set of communities modified at this step

2:   //Case : Creation of a new link
3:   IF  $a = \text{creation}$  THEN
4:     //growth (expansion) of communities
5:     FOR EACH  $C \in cs_i$ 
6:       IF  $GROWTH(j,C)$  THEN
7:          $V_C \leftarrow V_C \cup \{j\}$ 
8:          $E_C \leftarrow E_C \cup \{\{j,k\} \in V : k \in V_C\}$ 
9:          $MC \leftarrow MC \cup \{C\}$ 
10:      END IF
11:    END FOR EACH
12:    FOR EACH  $C \in cs_j$ 
13:      IF  $GROWTH(i,C)$  THEN
14:         $V_C \leftarrow V_C \cup \{i\}$ 
15:         $E_C \leftarrow E_C \cup \{\{i,k\} \in V : k \in V_C\}$ 
16:         $MC \leftarrow MC \cup \{C\}$ 
17:      END IF
18:    END FOR EACH

19:    //Birth of communities
20:    IF  $BIRTH(i,j) \neq \emptyset$  THEN
21:      FOR EACH  $C \in BIRTH(i,j)$ 
22:        IF  $C \notin C_x : C_x \in (cs_i \cup cs_j)$  THEN
23:           $P \leftarrow P \cup \{C\}$ 
24:           $MC \leftarrow MC \cup \{C\}$ 
25:        END FOR EACH
26:      END IF

27:    //Case removing of an edge
28:    ELSE
29:      //Contractions and/or division of communities
30:      FOR EACH  $C \in (cs_i \cap cs_j)$ 
31:         $CPRIME \leftarrow CONTRACTION\_DIVISION(C,i)$ 
32:        FOR EACH  $C_2 \in CPRIME$ 
33:          IF  $j \in C_2$ 
34:             $CPRIME \leftarrow CONTRACTION\_DIVISION(C,j)$ 
35:          END IF
36:        END FOR EACH
37:         $P \leftarrow P \setminus \{C\} \cup CPRIME$ 
38:         $MC \leftarrow MC \cup CPRIME$ 

39:      //Mort de communautés
40:      IF  $DEATH(C)$  THEN
41:         $P \leftarrow P \setminus \{C\}$ 
42:      END IF
43:    END FOR EACH
44:  END IF

45:  //Fusion of communities
46:  FOR EACH  $C \in MC$ 
47:    FOR EACH  $C_2 : V_{C_2} \cap V_C \neq \emptyset$ 
48:       $P \leftarrow P \setminus \{C, C_2\} \cup FUSION(C, C_2)$ 
49:    END FOR EACH
50:  END FOR EACH
51:END FOR EACH
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