

I**III**

n : # of epochs
 m : # of alternatives
 P/P' : pop. before/after evolution
 E/E' : env. before/after variations
 C : env. controller

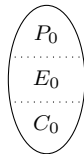
Invariants

$$\forall 1 \leq k \leq m, P_{i,k} = P'_{i-1,j}$$

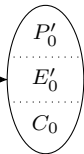
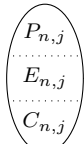
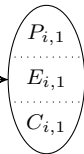
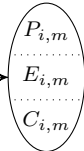
$$E_{i,k} = E'_{i-1,j}$$

$$C_{i,1} = C_{i-1,j}$$

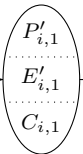
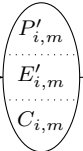
$$\forall 2 \leq k \leq m, C_{i,k} \neq C_{i-1,j}$$



1 epoch

**II** Branching $i < n$ **V** $1 \leq j \leq m$ **IV** Selection \vdots  \vdots

1 epoch

 \vdots  \vdots