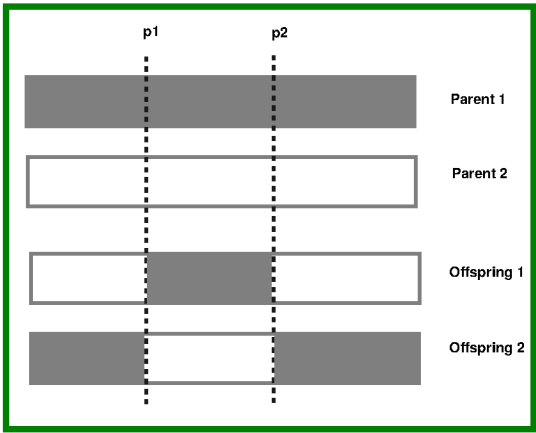# Méthode de résolution pour le problème de planification des tâches multi-objectif

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Equipe DOLPHIN
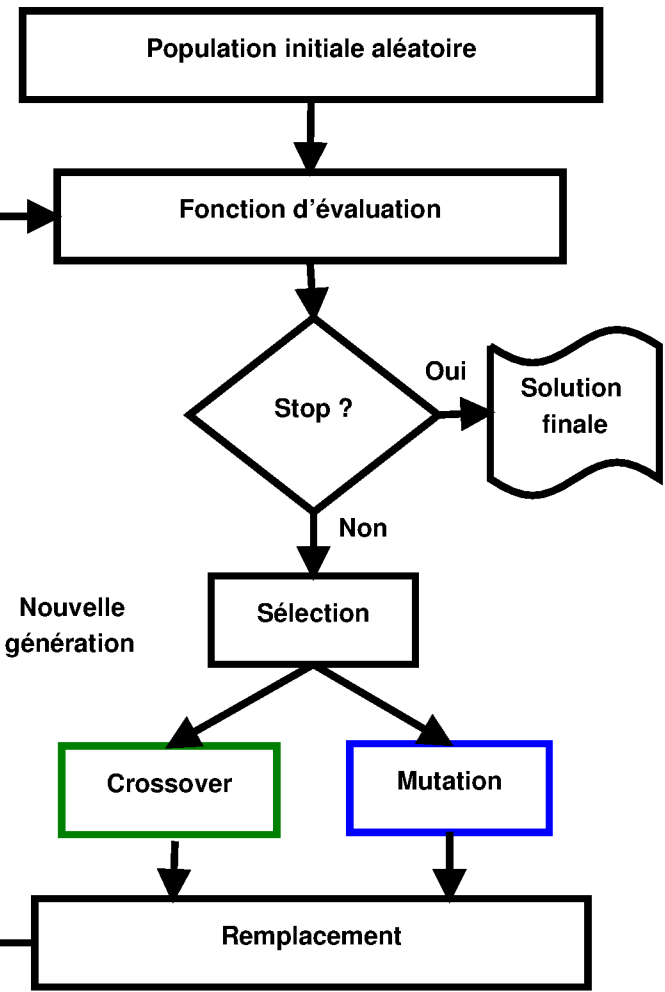
Algorithme évolutionnaire
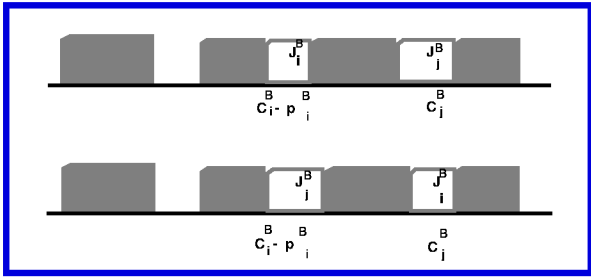
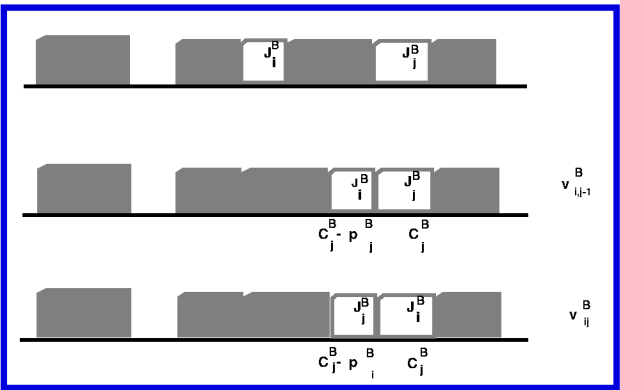**2 point**

p1   p2

Parent 1

Parent 2

Offspring 1

Offspring 2

Masque

Parent 1	3	5	2	1	6	4
Parent 2	1	4	5	3	2	6
	j3	j5	j2	j1	j6	j4
Mask 1	0.11	0.45	0.32	0.01	0.86	0.71
	j1	j4	j5	j3	j2	j6
Mask 2	0.35	0.28	0.62	0.64	0.93	0.55
	j1	j2	j3	j4	j5	j6
Mask 3	0.36	1.25	0.75	0.99	1.07	1.41
						Rank
Enfant	6	2	5	4	3	1

Population initiale aléatoire

Fonction d'évaluation

Stop ? — Oui → **Solution finale**

Non

Nouvelle génération

Sélection

Crossover — **Mutation**

Remplacement

Swap

$C_i^B - p_i^B$ C_j^B

J_i^B J_i^B

$C_i^B - p_i^B$ C_j^B

J_j^B J_i^B

Extract-and-reinsert

J_i^B J_j^B

$C_j^B - p_j^B$ C_j^B $v_{i,j-1}^B$

J_i^B J_j^B

$C_i^B - p_i^B$ C_j^B $v_{i,j}^B$

Subblock shift

J_i^B J_j^{B+1}

$t < l(B+1)$

J_i^{B+1} J_i^{B+2}

$t = l(B+1)$

J_i^{B+1} J_i^{B+1}

Multi-objectif

Convergence

Diversification
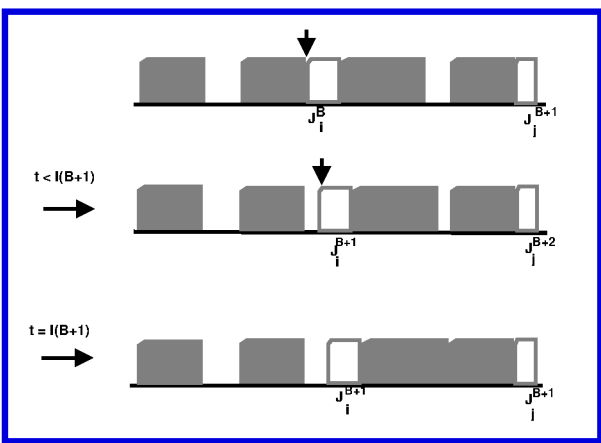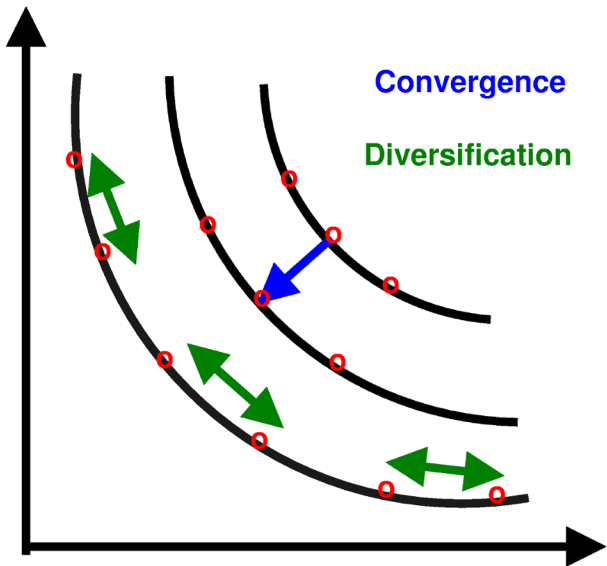
$$objectif1 : earliness = \sum_{i=0}^{N} \alpha_i \max((d_i - C_i), 0)$$

$$objectif2 : tardiness = \sum_{i=0}^{N} \beta_i \max((C_i - d_i), 0)$$

Résultats

	2-point		Mask		BestC		Mutation	
	eps	hyp	eps	hyp	eps	hyp	eps	hyp
20	≥ 0.5	=	≥ 0.3	=	=	=	=	≥ 0.3
60	=	=	=	=	=	=	=	=

	2-point		Mask		BestC		Mutation	
	eps	hyp	eps	hyp	eps	hyp	eps	hyp
20	=	=	=	=	=	=	=	=
60	=	=	=	=	=	Mask	=	=