Algorithm 6: PerformDeflations

Input : $\vec{B}, \overrightarrow{LIB}, \overrightarrow{CIB}, \vec{\sigma}, \overrightarrow{min}, \overrightarrow{max}, \mathcal{D}$, $acceptedCandSet_1$, $acceptedCandSet_2$, noCandidates, $\hat{O}.m$

ConfigParams: $\delta_{cost}, \delta_{restart}$, noSimulations, maxSimBudget, $\overrightarrow{PB}$, CB, $\vec{\beta}$

Output : $acceptedCandSet_1$, $acceptedCandSet_2$, noCandidates, $\hat{O}.m, \overrightarrow{CIB}$

1 repeat

2   (result, $\overrightarrow{NIB}, X_1, \{X_2, \ldots, X_k\}, O.m, O.sd, \overrightarrow{SC.m}, \overrightarrow{SC.sd}$, N) ← Deflate $(\vec{B}, \overrightarrow{LIB}, \overrightarrow{CIB}, \vec{\sigma}, \overrightarrow{min}, \overrightarrow{max},$

                                $\mathcal{D}, \delta_{cost}, \delta_{restart}$, noSimulations, $\overrightarrow{PB}$, CB, $\vec{\beta}$) // Algorithm 7

3   **if** result is accept or not-reject **then**

4   **if** result is accept and O.m statistically better than $\hat{O}.m$ with at least CB confidence **then**

5 $acceptedCandSet_2 \leftarrow acceptedCandSet_2 \cup \{\overrightarrow{X_2}, \ldots, \overrightarrow{X_k}\}$

6   noCandidates ← noCandidates + (k - 1)

7   **end**

8 $acceptedCandSet_1 \leftarrow acceptedCandSet_1 \cup \{(\overrightarrow{X}_1, O.m, O.sd, \overrightarrow{SC.m}, \overrightarrow{SC.sd}, N)\}$

9 $\hat{O}.m \leftarrow O.m$

10   noCandidates ← noCandidates + 1

11   **end**

12 $\overrightarrow{CIB} \leftarrow \overrightarrow{NIB}$

13 until result is reject

14 return $acceptedCandSet_1$, $acceptedCandSet_2$, noCandidates, $\hat{O}.m, \overrightarrow{CIB}$

Algorithm 7: Deflate

Input : $\vec{B}, \overrightarrow{LIB}, \overrightarrow{CIB}, \vec{\sigma}, \overrightarrow{min}, \overrightarrow{max}, \mathcal{D}$

ConfigParams: $\delta_{cost}, \delta_{restart}$, noSimulations, $\overrightarrow{PB}$, CB, $\vec{\beta}$

Output : result, $\overrightarrow{NIB}, X_1, \{X_2, \ldots, X_k\}, O.m, O.sd, \overrightarrow{SC.m}, \overrightarrow{SC.sd}$, N

1 $((\overrightarrow{X_1}, O_1), \ldots, (\overrightarrow{X_k}, O_k)) \leftarrow$ GenerateCandidates $(\overrightarrow{CIB}, \overrightarrow{min}, \overrightarrow{max}, \delta_{cost}, \delta_{restart})$

2 (result, $O.m, O.sd, \overrightarrow{SC.m}, \overrightarrow{SC.sd}$, N) ← PerformStochasticSimulations $(\overrightarrow{X}_1, \vec{B},$

               $\vec{\sigma}, \mathcal{D}$, noSimulations, maxSimBudget, $\overrightarrow{PB}$, CB) // Algorithm 5

3 $\overrightarrow{NIB} \leftarrow [\,]$

4 if result is accept **then**

5   **for** $i \in \mathcal{D}$ **do**

6   **if** $(SC.m_i \geq PB_i) \geq CB$ **then**

7 $\Delta \leftarrow CIB_i - LIB_i$

8   **if** $(\beta_i \times \Delta) \geq \tau$ **then**

9 $NIB_i \leftarrow CIB_i - (\beta_i \times \Delta)$

10   **else**

11 $NIB_i \leftarrow CIB_i$

12   **end**

13   **else**

14 $NIB_i \leftarrow CIB_i$

15   **end**

16   **end**

17 end

18 return result, $\overrightarrow{NIB}, X_1, \{X_2, \ldots, X_k\}, O.m, O.sd, \overrightarrow{SC.m}, \overrightarrow{SC.sd}$, N