Algorithm 5: 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

// Algorithm 6

2 $\quad$ (result, $\overrightarrow{NIB}, X_1, \{X_2, \ldots, X_k\}, O.m, O.sd, \overrightarrow{SC.m}, \overrightarrow{SC.sd}$, N) $\leftarrow$ Deflate $(\vec{B}, \overrightarrow{LIB}, \overrightarrow{CIB}, \vec{\sigma}, \overrightarrow{min}, \overrightarrow{max},$
$\qquad\qquad\qquad\qquad\qquad \mathcal{D}, \delta_{cost}, \delta_{restart}$, noSimulations, $\overrightarrow{PB}$, CB, $\vec{\beta}$)

3 $\quad$ **if** result is accept or not-reject **then**

4 $\quad\quad$ $acceptedCandSet_2 \leftarrow acceptedCandSet_2 \cup \{\overrightarrow{X_2}, \ldots, \overrightarrow{X_k}\}$

5 $\quad\quad$ noCandidates $\leftarrow$ noCandidates + (k - 1)

6 $\quad\quad$ **if** result is accept and O.m statistically better than $\hat{O}.m$ with at least CB confidence **then**

7 $\quad\quad\quad$ $acceptedCandSet_1 \leftarrow acceptedCandSet_1 \cup \{(\overrightarrow{X}_1, O.m, O.sd, \overrightarrow{SC.m}, \overrightarrow{SC.sd},$ N)$\}$

8 $\quad\quad\quad$ $\hat{O}.m \leftarrow O.m$

9 $\quad\quad\quad$ noCandidates $\leftarrow$ noCandidates + 1

10 $\quad\quad$ **end**

11 $\quad$ **end**

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

13 until result is reject

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

Algorithm 6: 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) $\leftarrow$ PerformStochasticSimulations $(\overrightarrow{X}_1, \vec{B},$
$\qquad\qquad \vec{\sigma}, \mathcal{D}$, noSimulations, maxSimBudget, $\overrightarrow{PB}$, CB) // Algorithm 7

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

4 if result is accept **then**

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

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

7 $\quad\quad\quad$ $\Delta \leftarrow CIB_i - LIB_i$

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

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

10 $\quad\quad\quad$ **else**

11 $\quad\quad\quad\quad$ $NIB_i \leftarrow CIB_i$

12 $\quad\quad\quad$ **end**

13 $\quad\quad$ **else**

14 $\quad\quad\quad$ $NIB_i \leftarrow CIB_i$

15 $\quad\quad$ **end**

16 $\quad$ **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