Algorithm 1: RaMSS algorithm

$\boldsymbol{y}, N_p, m, \mu_{\min}, \mu_{\max}, K, \mathscr{R} = \{\phi_1, \ldots, \phi_m\}$
while $iter < iter_{\max}$ **do**
  $\boldsymbol{\mu} \leftarrow \boldsymbol{\mu}_0$
  for $i = 1 : N_p$ **do**
    $\tau \leftarrow 0$; $\boldsymbol{\psi}(k) \leftarrow [\ ]$
    for $j = 1 : m$ **do**
      $r_j \leftarrow \mathrm{Be}(\mu_j)$
      if $r_j = 1$ **then**
        $\boldsymbol{\psi}(k) \leftarrow \begin{bmatrix} \boldsymbol{\psi}^T(k) & \phi_j \end{bmatrix}^T$
        $\tau \leftarrow \tau + 1$
    $\hat{\boldsymbol{\theta}} \leftarrow LS$
    for $h = 1 : \tau$ **do**
      $\tilde{\boldsymbol{\psi}}(k) \leftarrow \text{non-redundant}(\boldsymbol{\psi}(\boldsymbol{k}))$
    $\hat{\boldsymbol{y}} \leftarrow \text{Predict}(\tilde{\boldsymbol{\psi}}(k))$
    $\mathcal{J}_i \leftarrow e^{-K \cdot MSPE(\boldsymbol{y}, \hat{\boldsymbol{y}})}$
  for $j = 1 : m$ **do**
    $\mathcal{J}^+ \leftarrow 0$; $\mathcal{J}^- \leftarrow 0$; $n^+ \leftarrow 0$; $n^- \leftarrow 0$;
    for $i = 1 : N_p$ **do**
      if $\phi_j(k) \in \tilde{\boldsymbol{\psi}}(k)$ **then**
        $\mathcal{J}^+ \leftarrow \mathcal{J}^+ + \mathcal{J}_i$
        $n^+ \leftarrow n^+ + 1$
      else
        $\mathcal{J}^- \leftarrow \mathcal{J}^- + \mathcal{J}_i$
        $n^- \leftarrow n^- + 1$
    $\mathcal{I}_j \leftarrow \left(\frac{\mathcal{J}^+}{\max(n^+, 1)} - \frac{\mathcal{J}^-}{\max(n^-, 1)} \right)$
    $\mu_j \leftarrow \mu_j + \gamma \mathcal{I}_j$
    $\mu_j \leftarrow \max\left(\min(\mu_j, \mu_{\max}), \mu_{\min}\right)$