Take MD Step:

Update $E(\boldsymbol{R}) = \hat{S}\sum_{\alpha=1}^{P}\frac{\beta_\alpha}{\sigma_\alpha^2}E_\alpha(\boldsymbol{R}), \quad f_i^\mu = \hat{S}\sum_{\alpha=1}^{P}\frac{\beta_\alpha}{\sigma_\alpha^2}f_{i,\alpha}^\mu$

$n_P > n_{\max}$

$m_P > m_{\max}$

Yes

- **Create the (*P*+1)th local expert**
- $P = P + 1$

No

Update the inducing set, dataset, and weight vector in accordance with the SGPR technique:

$$\chi \to z_P = \{\chi_j\}$$

$$\boldsymbol{R} \to X_P = \{\boldsymbol{R}_n\}$$

$$\boldsymbol{w}^P$$