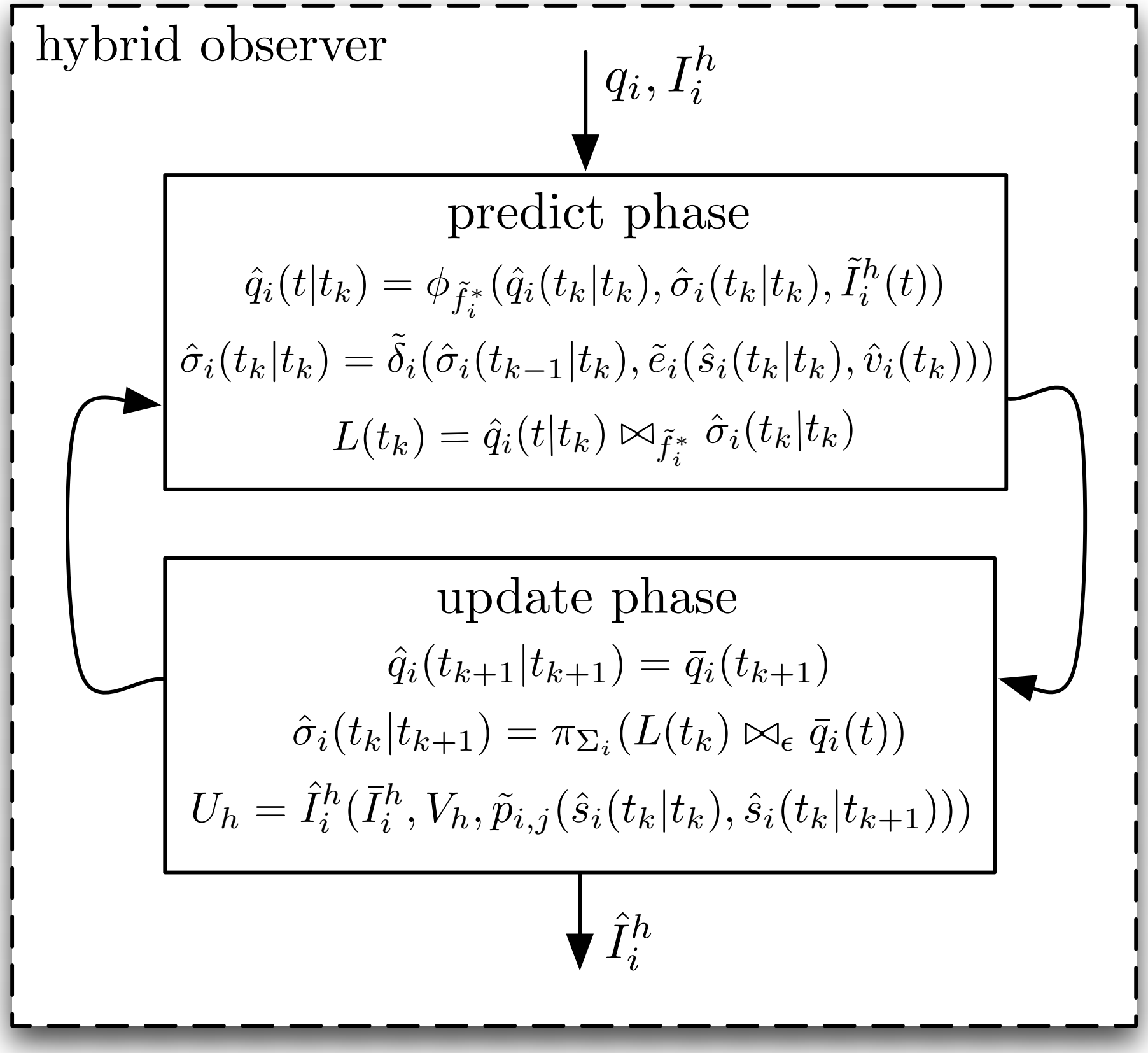
hybrid observer
q_i, I_i^h
predict phase
$\hat{q}_i(t|t_k) = \phi_{\tilde{f}_i^*}(\hat{q}_i(t_k|t_k), \hat{\sigma}_i(t_k|t_k), \tilde{I}_i^h(t))$
$\hat{\sigma}_i(t_k|t_k) = \tilde{\delta}_i(\hat{\sigma}_i(t_{k-1}|t_k), \tilde{e}_i(\hat{s}_i(t_k|t_k), \hat{v}_i(t_k)))$
$L(t_k) = \hat{q}_i(t|t_k) \bowtie_{\tilde{f}_i^*} \hat{\sigma}_i(t_k|t_k)$
update phase
$\hat{q}_i(t_{k+1}|t_{k+1}) = \bar{q}_i(t_{k+1})$
$\hat{\sigma}_i(t_k|t_{k+1}) = \pi_{\Sigma_i}(L(t_k) \bowtie_\epsilon \bar{q}_i(t))$
$U_h = \hat{I}_i^h(\bar{I}_i^h, V_h, \tilde{p}_{i,j}(\hat{s}_i(t_k|t_k), \hat{s}_i(t_k|t_{k+1})))$
$\hat{I}_i^h$