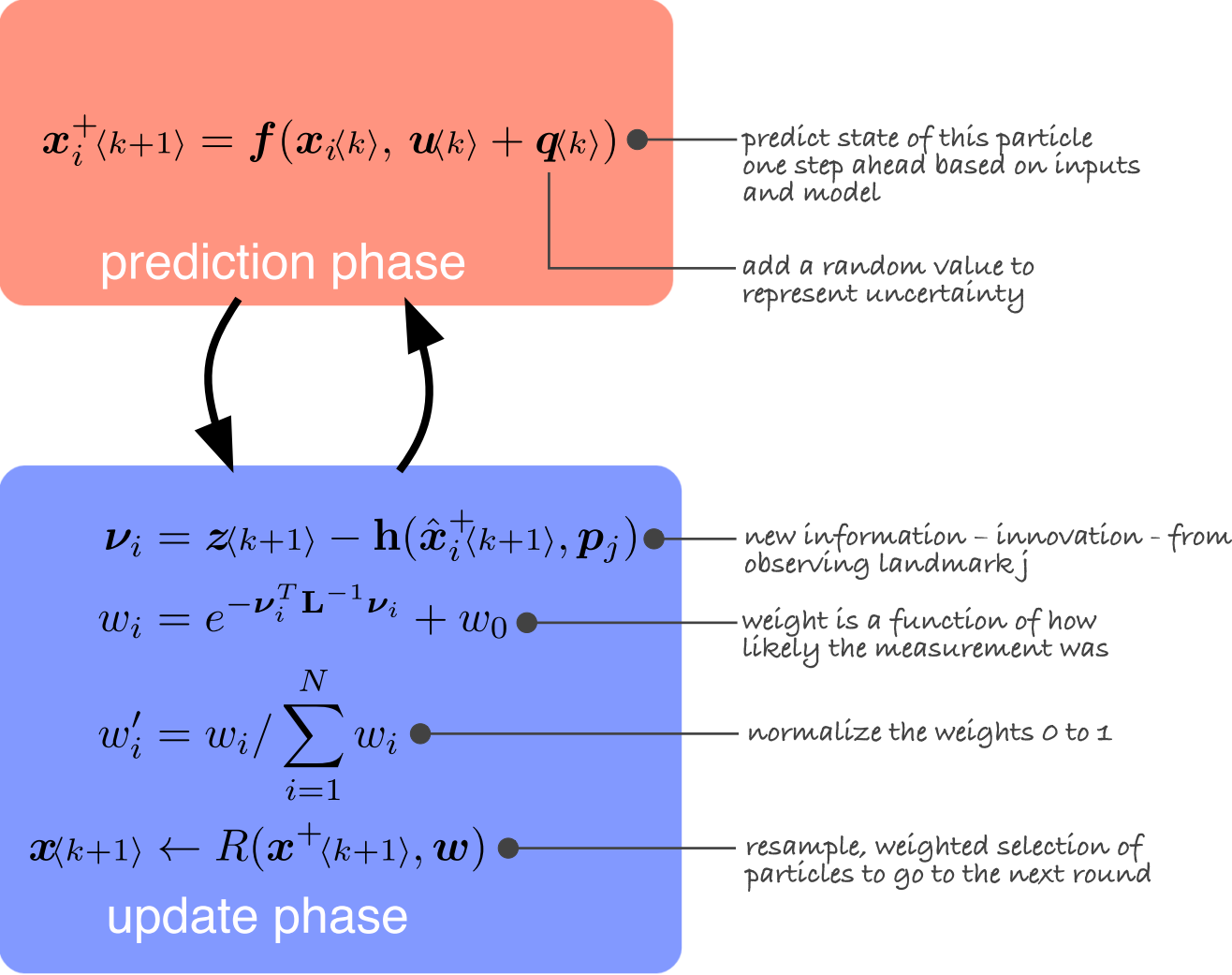
$\boldsymbol{x}_i^+\langle k+1\rangle = \boldsymbol{f}(\boldsymbol{x}_i\langle k\rangle,\ \boldsymbol{u}\langle k\rangle + \boldsymbol{q}\langle k\rangle)$
prediction phase
predict state of this particle one step ahead based on inputs and model
add a random value to represent uncertainty
$\boldsymbol{\nu}_i = \boldsymbol{z}\langle k+1\rangle - \mathbf{h}(\hat{\boldsymbol{x}}_i^+\langle k+1\rangle, \boldsymbol{p}_j)$
new information – innovation – from observing landmark j
$w_i = e^{-\boldsymbol{\nu}_i^T \mathbf{L}^{-1} \boldsymbol{\nu}_i} + w_0$
weight is a function of how likely the measurement was
$w_i' = w_i / \sum_{i=1}^{N} w_i$
normalize the weights 0 to 1
$\boldsymbol{x}\langle k+1\rangle \leftarrow R(\boldsymbol{x}^+\langle k+1\rangle, \boldsymbol{w})$
resample, weighted selection of particles to go to the next round
update phase