3D update

Input:

Particle state vector

Particle predicted state vector

Particle weights

– number of a particle

– time index

– coordinates and floor number

Ϣ – MFP

Algorithm 1 (altitude velocity limit):

For each particle

1. Determine if particle position is within portal of Ϣ
2. Set if particle is NOT in portal AND

Algorithm 2 (avoid half-floor crossing):

1. Define portal motion flag from barometer measurements as:
2. For each particle : determine if particle position is within portal of Ϣ
3. For each particle : set if particle is NOT in portal AND AND

Algorithm 3 (altitude based LKH approach):

1. Define portal motion flag from barometer measurements as:
2. Determine if and if it true, select particles, where – percent of LKH particles
3. For each selected particle m:
   1. Set position as
   2. Set weight as