Initial calculation

Calculate the numerator of λ_c for each face.

For every timestep

1. **Estimate the end position.**

   For each particle estimate the end position using the particles velocity.

2. **Find faces**

   For each particle find the set of faces for which $\lambda_c \in [0,1]$.

3. **Update the set of remaining particles**

   Create a new set called remaining particles which consists of particles for which one or more faces were found.

4. **Calculate λ_a**

   For each particle in the set of remaining particles, find the smallest λ_a and the face hit by the particle.

5. **Move particles**

   For particles in the set of remaining particles move each particle onto the face hit and update the occupancy information. The particles not in the set of remaining particles can be just moved to their end position.

6. **Update velocity**

   For all particles in the set of remaining particles the particles velocity is updated using the velocity from the new occupancy cell.

7. **Update the set of particles**

   In the next step only particles from this steps set of remaining are considred.

Repeat until all particles reach their end position.