

Figure 1. Schematic Geometry

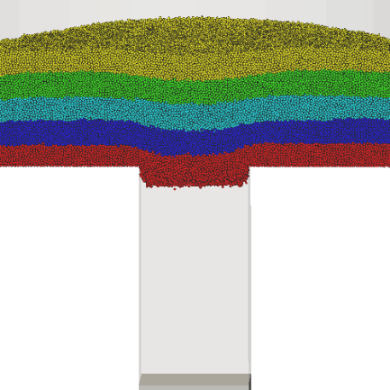
Table 1. Physical Properties

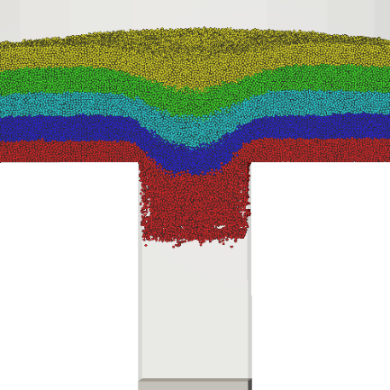
|  |  |
| --- | --- |
| Gas phase |  |
| Viscosity | 1.8×10-5 Pa・s |
| Density | 1 kg/m3 |
| Solid phase |  |
| Density | 1500 kg/m3 |
| Spring constant | 50 N/m |
| Coefficient of restitution | 0.9 |
| Coefficient of friction | 0.3 |

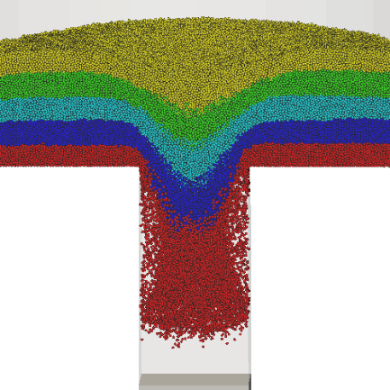
Table 2. Calculation conditions

|  |  |
| --- | --- |
| Particle diameter | 250 μm |
| Number of particles | 500,000 |
| Grid size | 0.5 mm |
| Calculation time | 0.24 s |

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0.02 s

0.04 s

0.06 s

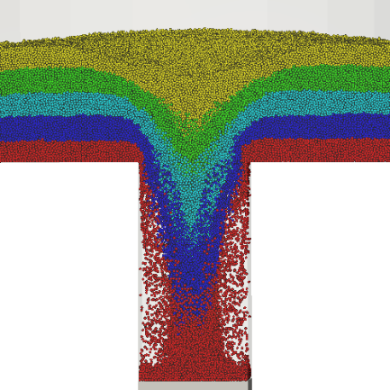
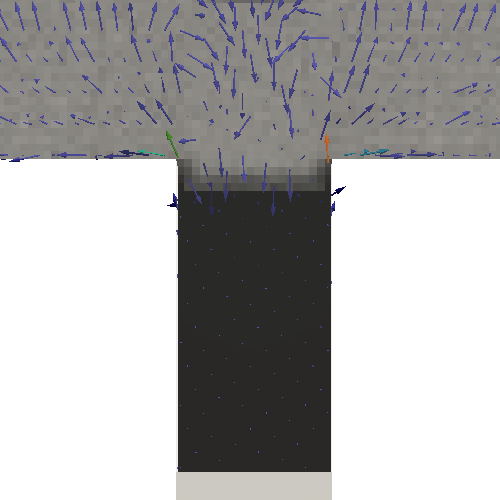
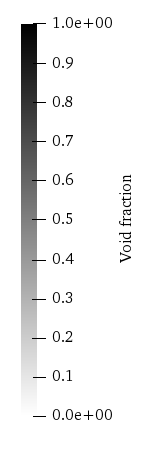
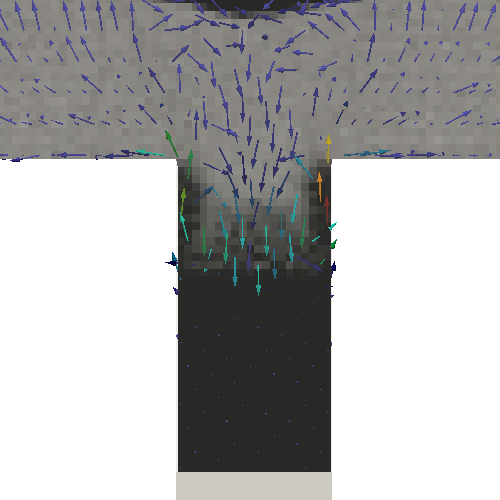
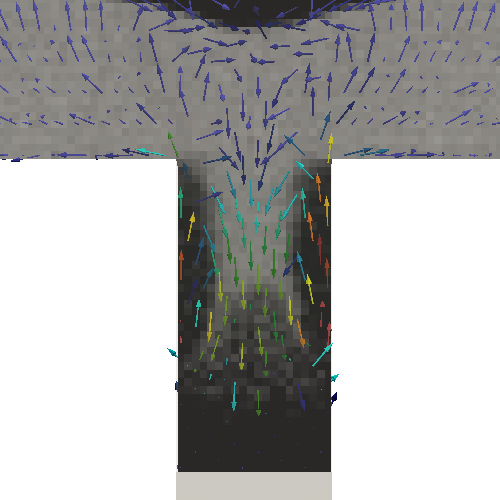
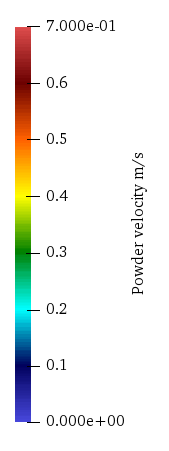
0.08 s

Figure 2. Powder flow (Gravity filling)

0.02s

0.04s

0.06s

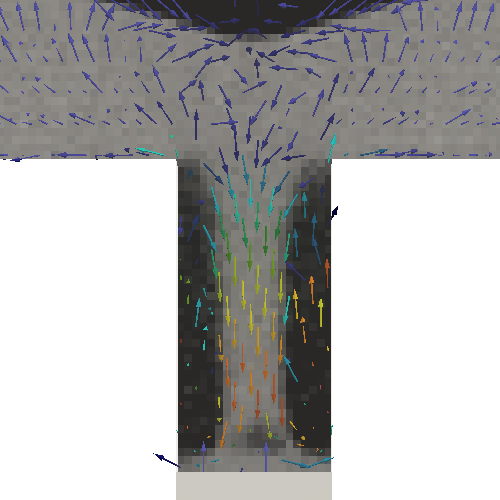
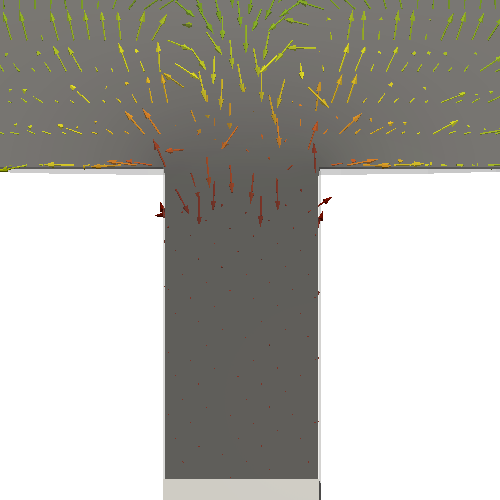
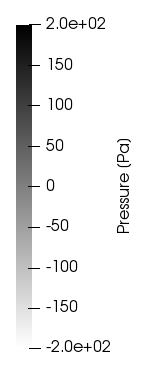
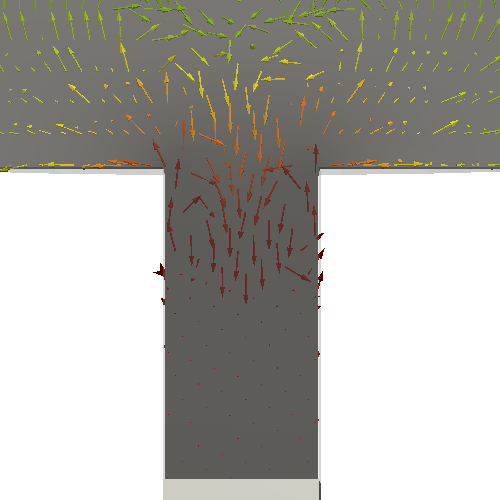
0.08s

Figure 3. Powder velocity

0.02s

0.04s

0.06s

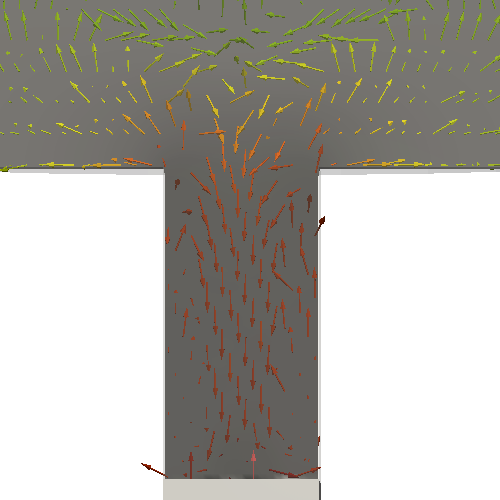
0.08s

Figure 4. Air velocity

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下杵降下速度100, 300, 500, 700 [mm/s]