

1 Geometry description

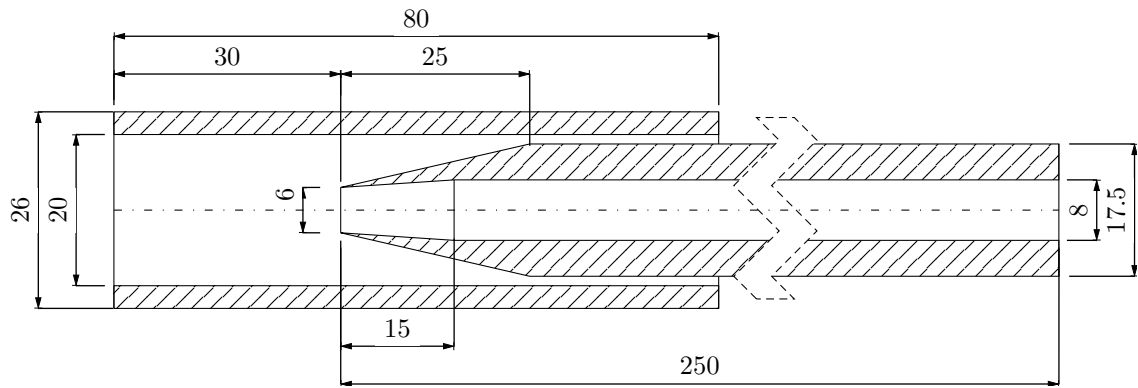


Figure 1: Geometry M7 definition

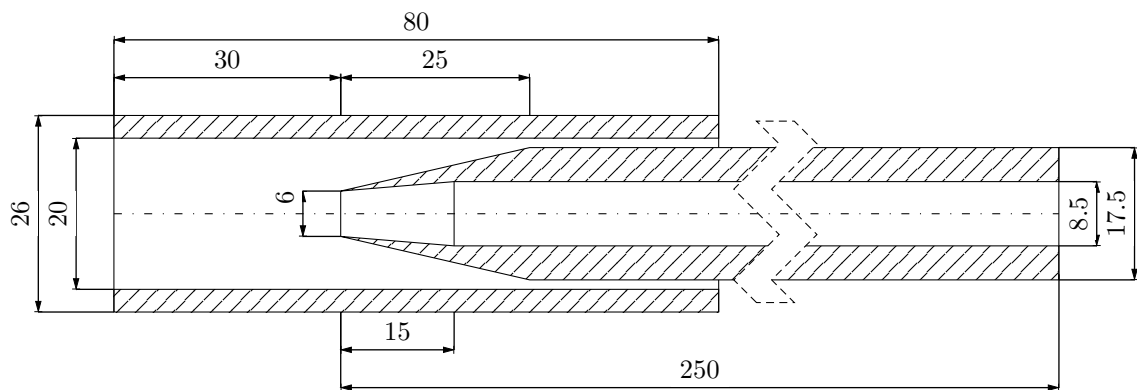


Figure 2: Geometry M9 definition

2 Free stream conditions

Parameter	Condition			
	C1	C2	C3	C4
Free stream speed $U_{\infty}(m/s)$	25	14	11.5	8.5
Free stream turbulent intensity	1.3%	1.3%	1.3%	1.3%
Kinematic viscosity $\nu(m^2/s)$	1.5×10^{-5}	1.5×10^{-5}	1.5×10^{-5}	1.5×10^{-5}

Table 1: Free stream conditions descriptions of solved cases.

3 Results

All results has been obtained using $k - \omega - SST$ turbulence model as implemented in OpenFoam V2012.

3.1 Free stream conditions: C1. Geometry: M7

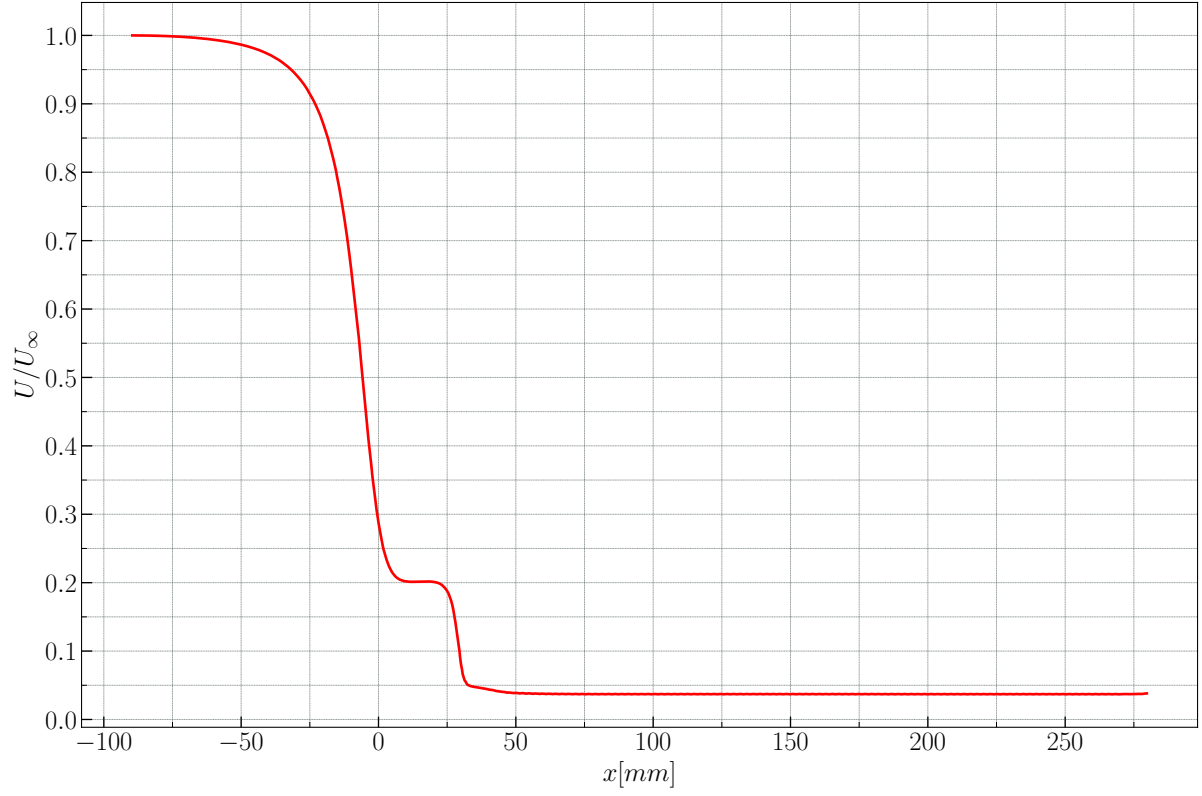


Figure 3: Average velocity U_m along the line of symmetry. Free stream conditions: C1. Geometry: M7. Origin of coordinates is located at the entrance of the shroud.

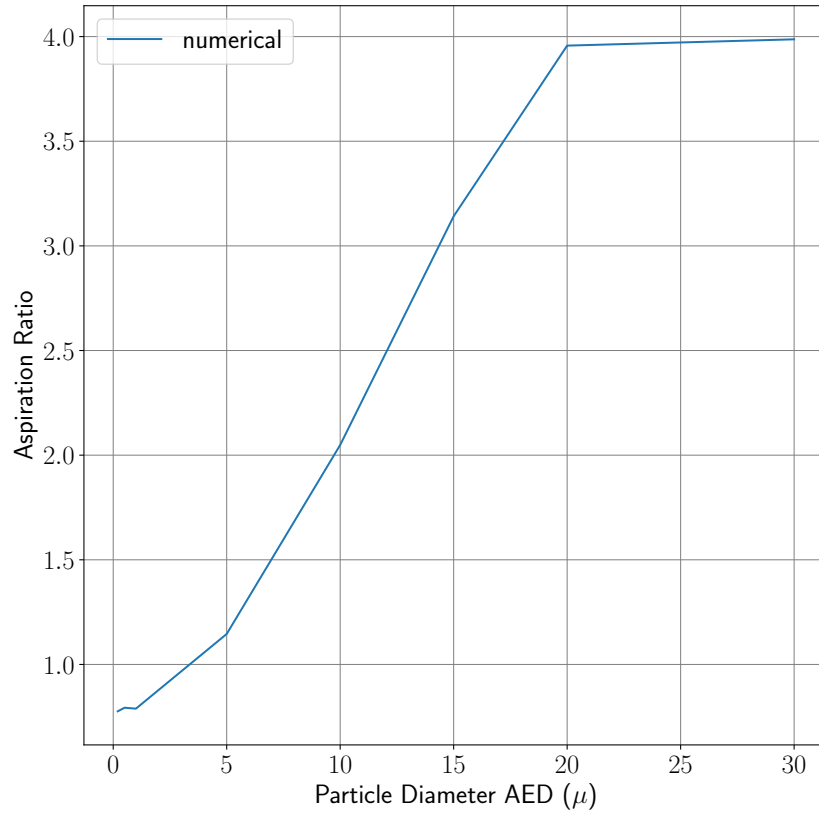


Figure 4: Aspiration ratio vs Aerodynamic Equivalent Diameter of particles. Free stream conditions: C1. Geometry: M7.

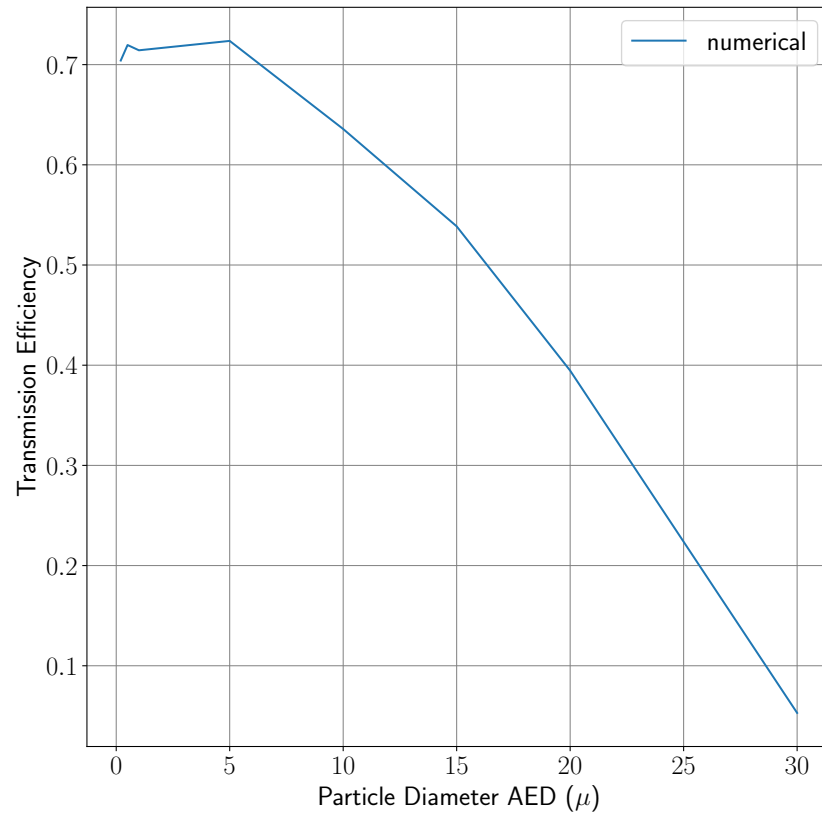


Figure 5: Transmission efficiency vs Aerodynamic Equivalent Diameter of particles. Free stream conditions: C1. Geometry: M7.

3.2 Free stream conditions: C2. Geometry: M9

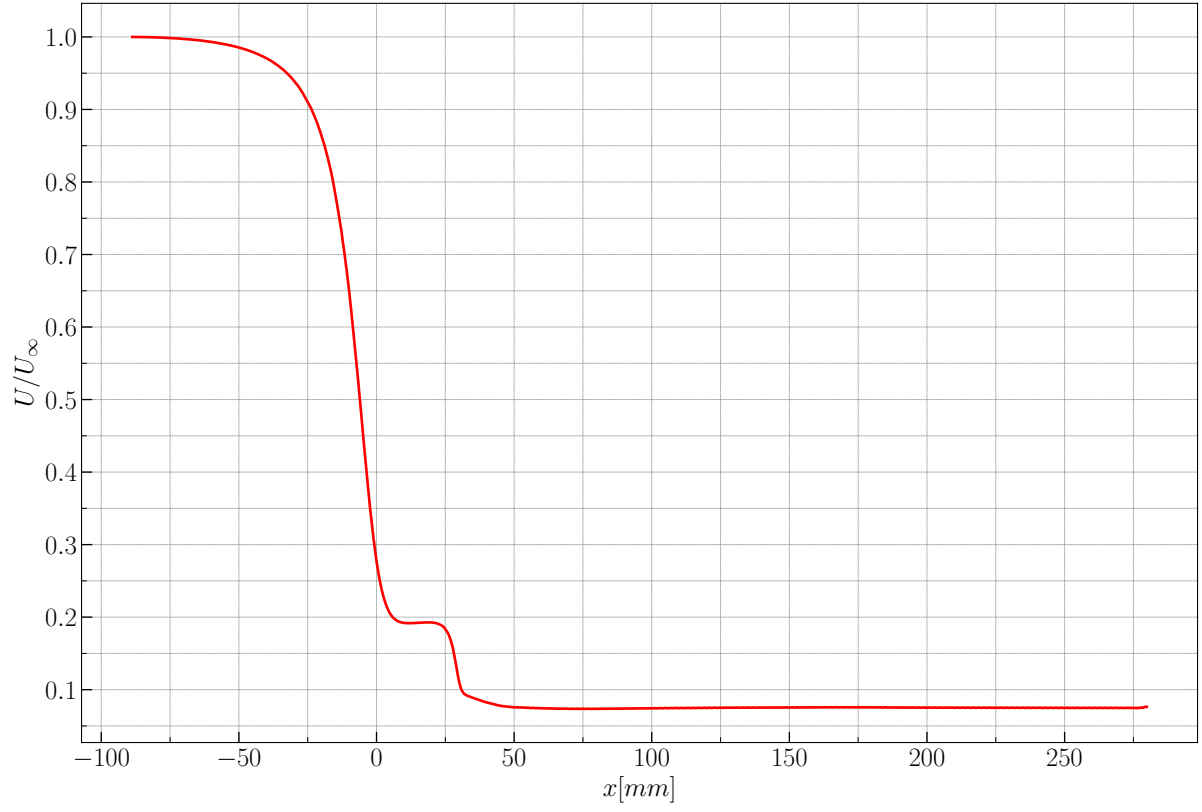


Figure 6: Average velocity U_m along the line of symmetry. Free stream conditions: C2. Geometry: M9. Origin of coordinates is located at the entrance of the shroud.

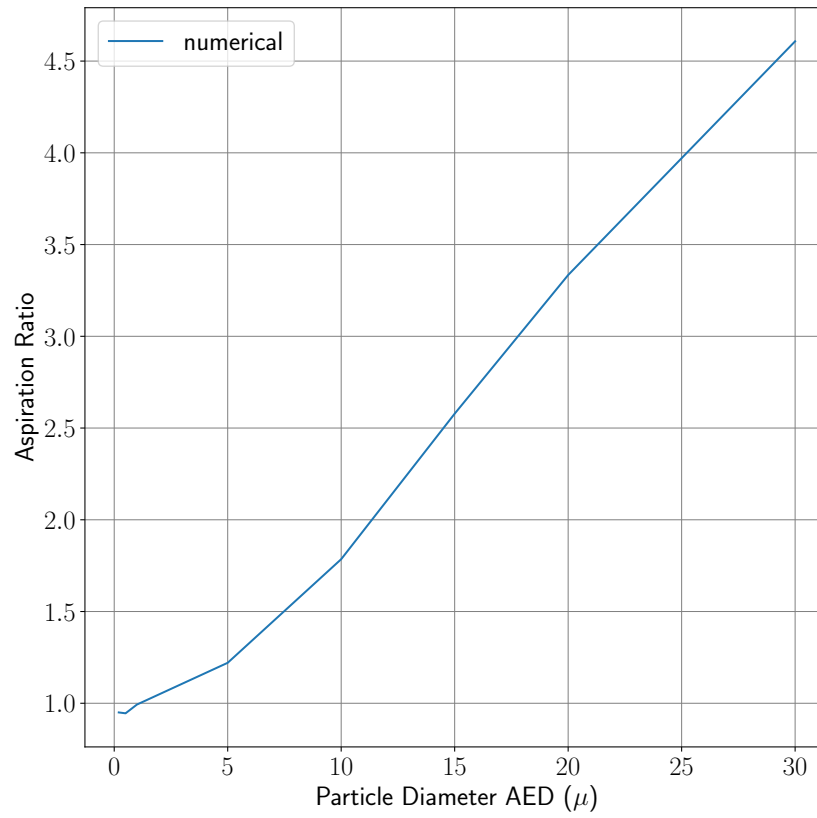


Figure 7: Aspiration ratio vs Aerodynamic Equivalent Diameter of particles. Free stream conditions: C2. Geometry: M9.

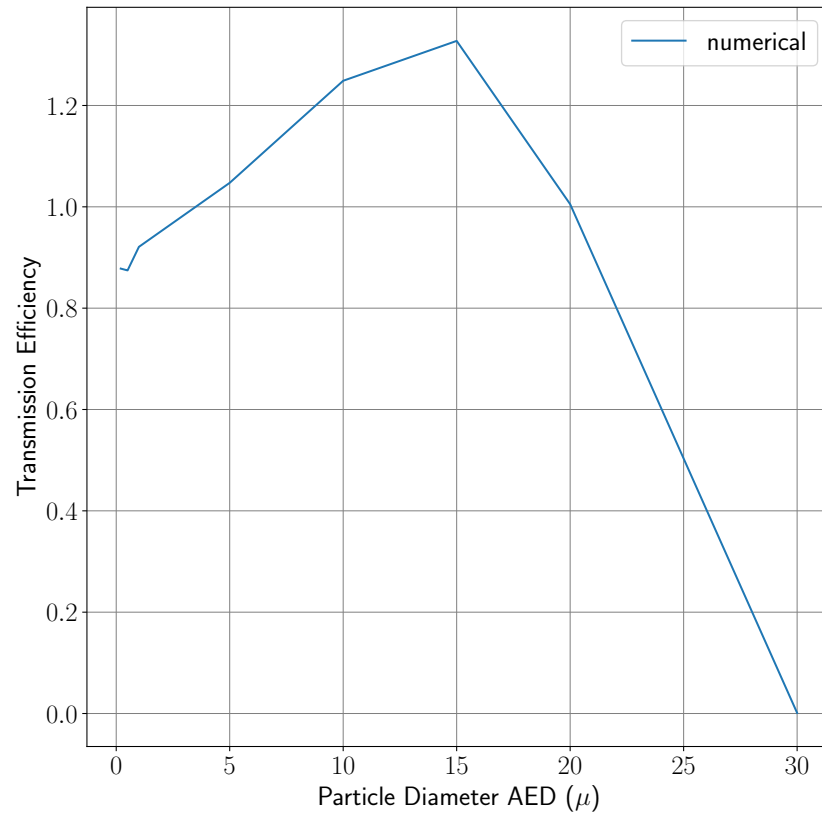


Figure 8: Transmission efficiency vs Aerodynamic Equivalent Diameter of particles. Free stream conditions: C2. Geometry: M9.

3.3 Free stream conditions: C3. Geometry: M9

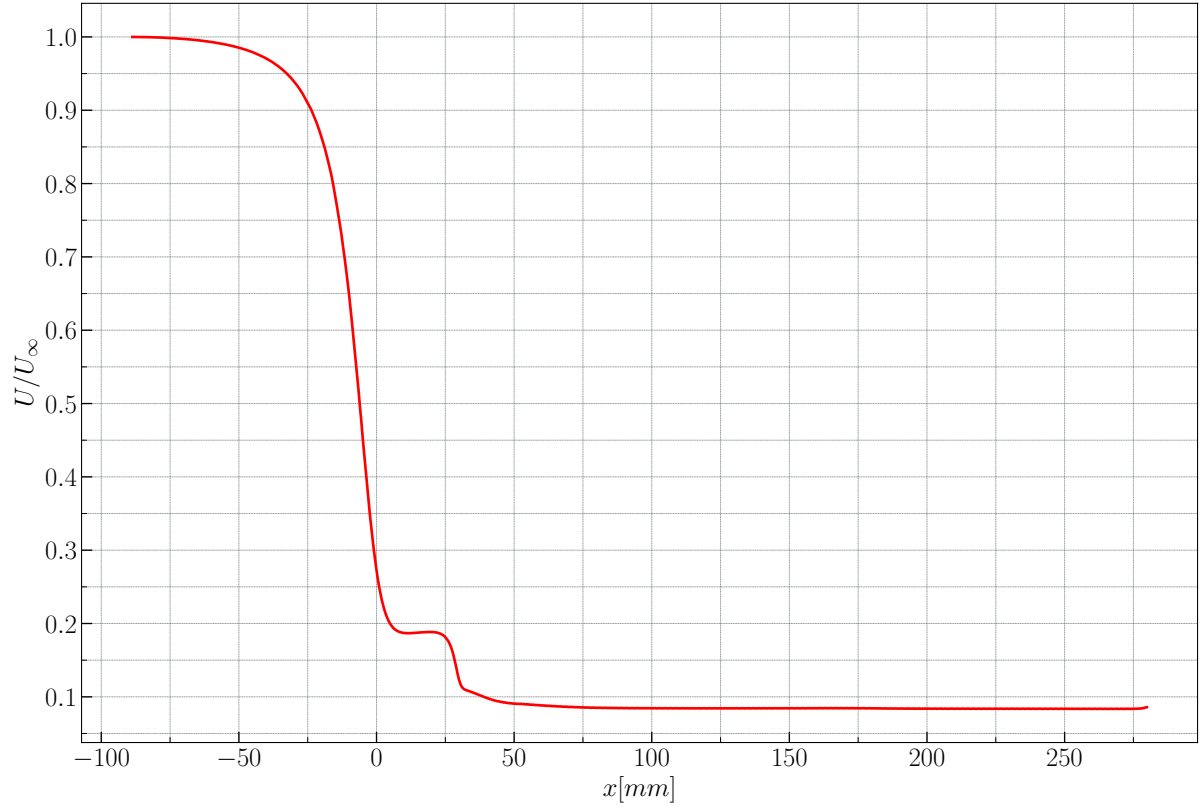


Figure 9: Average velocity U_m along the line of symmetry. Free stream conditions: C3. Geometry: M9. Origin of coordinates is located at the entrance of the shroud.

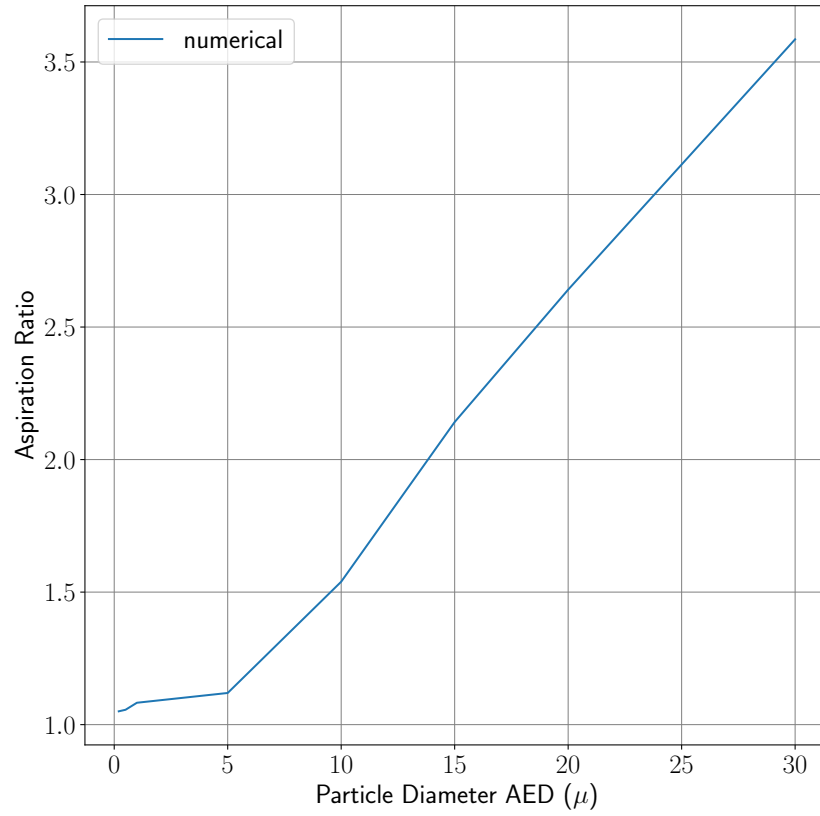


Figure 10: Aspiration ratio vs Aerodynamic Equivalent Diameter of particles. Free stream conditions: C3. Geometry: M9.

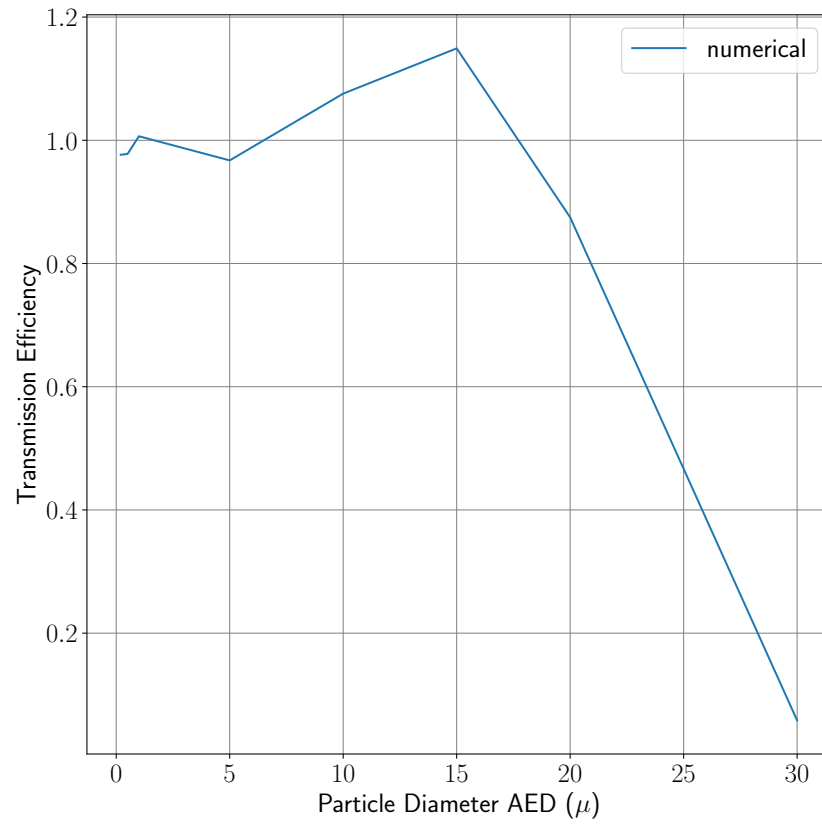


Figure 11: Transmission efficiency vs Aerodynamic Equivalent Diameter of particles. Free stream conditions: C3. Geometry: M9.

3.4 Free stream conditions: C4. Geometry: M9

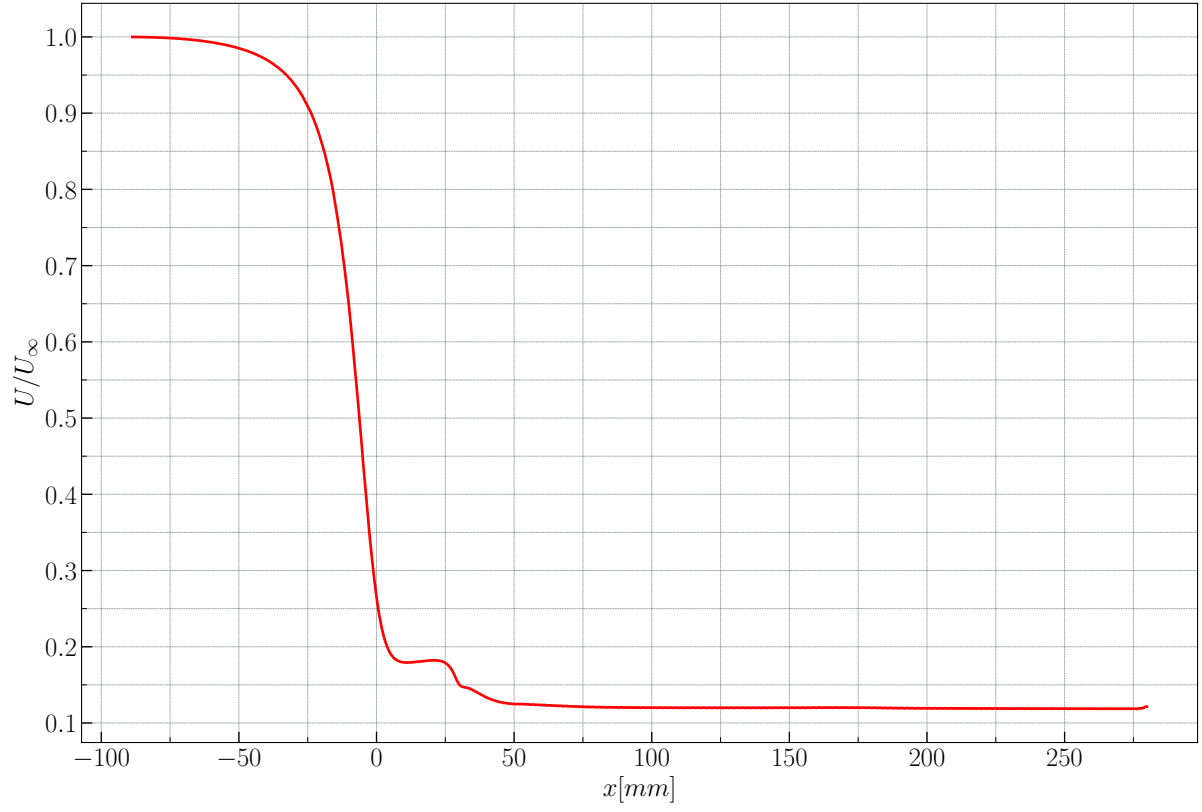


Figure 12: Average velocity U_m along the line of symmetry. Free stream conditions: C4. Geometry: M9. Origin of coordinates is located at the entrance of the shroud.

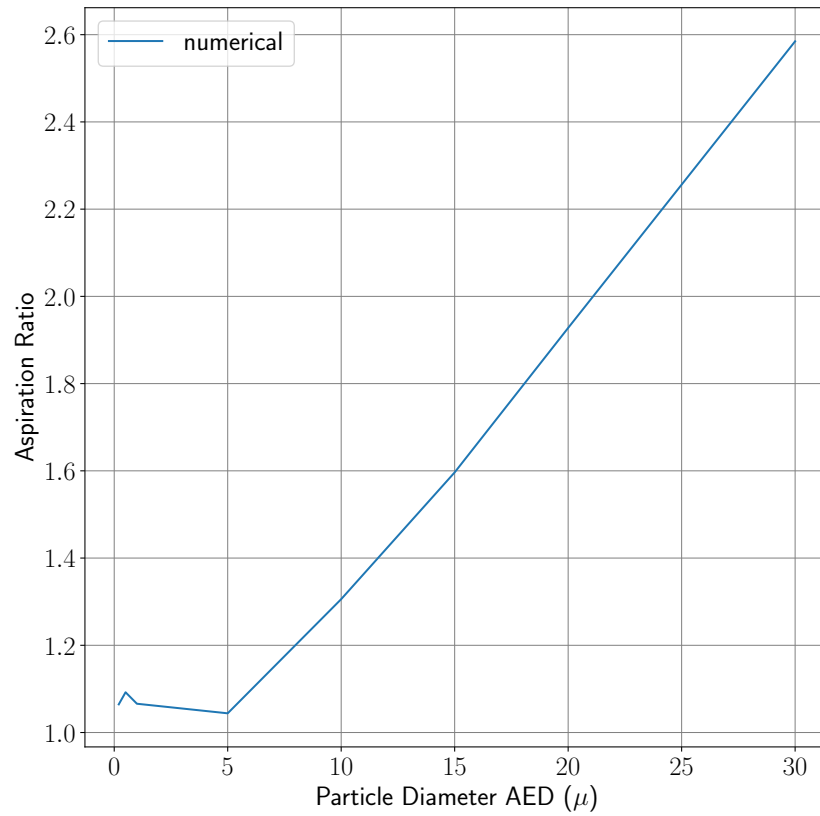


Figure 13: Aspiration ratio vs Aerodynamic Equivalent Diameter of particles. Free stream conditions: C4. Geometry: M9.

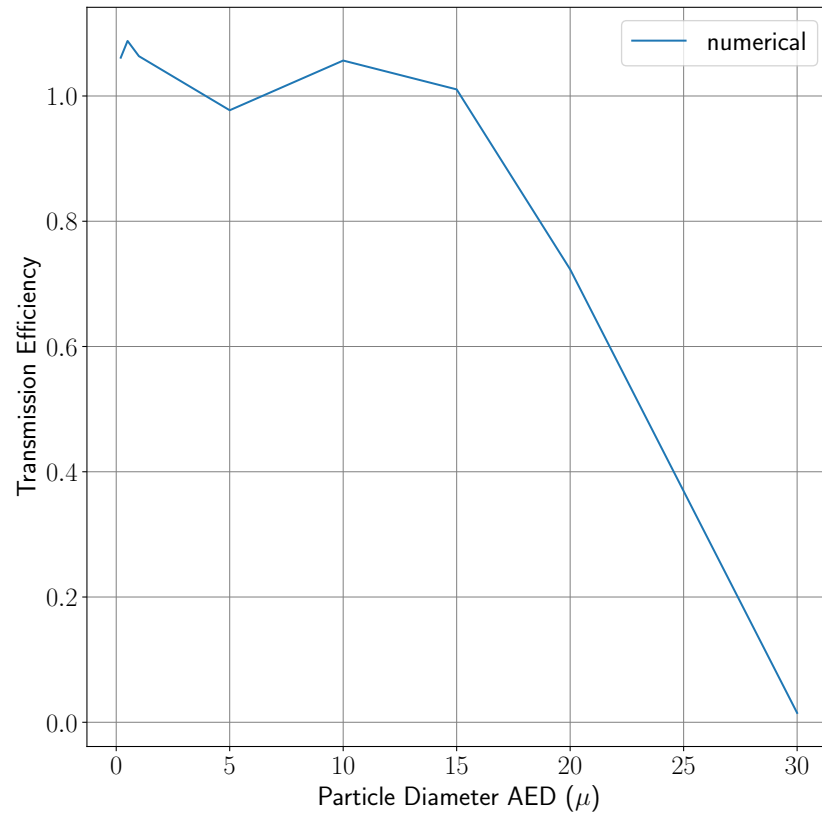


Figure 14: Transmission efficiency vs Aerodynamic Equivalent Diameter of particles. Free stream conditions: C4. Geometry: M9.