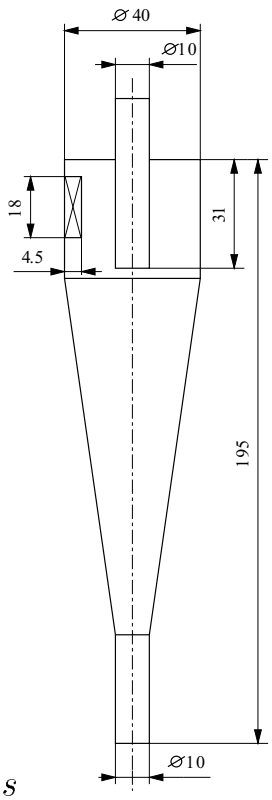
Prediction of particle precipitation in a standard cyclon

Geometry and numerical mesh :



Standard cyclon used in experiments by König (1990)

Inlet cross section :	$4.5 \times 18\ mm$
Diameter of the cyclon upper section :	$40\ mm$
Diameter of the gas exit :	$10\ mm$
Intrusion of the gas exit :	$31\ mm$
Diameter of the particle exit :	$10\ mm$
Height of the cyclon :	$195\ mm$
Number of grid blocks :	42
Number of CV's :	79524

Fluid phase :

Air under normal conditions

Density :	$1.21\ kg/m^3$
Kinematic viscosity :	$0.0000179\ m^2/s$
Inlet velocity :	$10.0\ m/s$

Disperse phase :

Quartz particles

Inlet velocity :	$10.0\ m/s$
Density :	$2500.0\ kg/m^3$
Particle diameter :	$0.2 \ldots 20\ \mu m$
Restitution coefficient :	0.95
Coefficient of kinetic friction :	0.35

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A 3–dimensional Lagrangian Solver for Disperse Multiphase Flows on Geometrically Complex Flow Domains

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