1 Swirl Ratio

The aspect ratio(A) and swirl ratio(S) are defined[1]:

$$A = \frac{H_0}{R_0}$$

$$S = \frac{V_0}{2AU_0}$$

where

R_0**:** the radius of the updraft in a tornado vortex chamber (Figure 1).

H_0**:** the depth of inflow.

U_0**:** the radial velocity at R_0.

V_0**:** the axial velocity at R_0.

References

[1] Diwakar Natarajan. *Numerical simulation of tornado-like vortices*. PhD thesis, The University of Western Ontario, 2011.

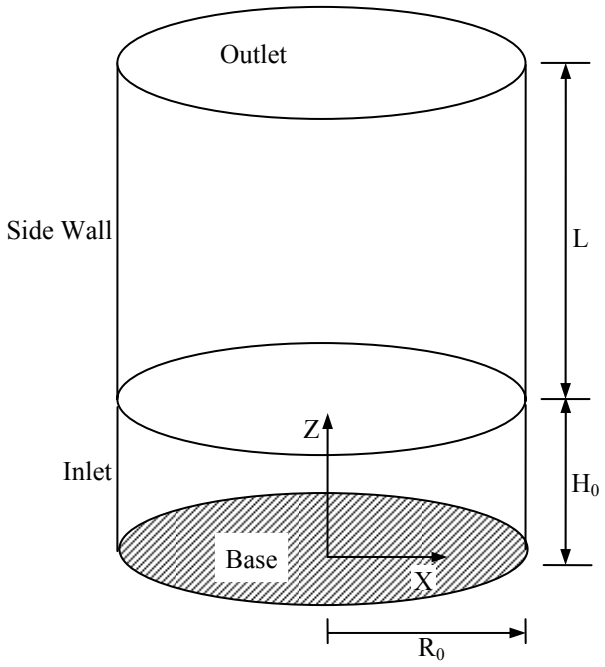

Figure 1: Schematic diagram of the domain in the TVC model