4. **Threshold Comparison:** Comparing each variable against its tenability limit at each timestep

6.3 Trilinear Interpolation

Since the exit location may not align with grid cell centers, trilinear interpolation provides accurate values at arbitrary positions within the computational domain:

$$V(x,y,z) = \sum_{i=0}^{1} \sum_{j=0}^{1} \sum_{k=0}^{1} V_{ijk} \times (1-x_d)^{(1-i)} \times x_d^{i} \times (1-y_d)^{(1-j)} \times y_d^{j} \times (1-z_d)^{(1-k)} \times z_d^{k}$$

V_{ijk}	Values at the 8 surrounding grid cell corners
x_d, y_d, z_d	Normalized distances from lower grid cell corner (0 to 1)

6.4 Safety Margin Analysis

The safety margin represents the difference between ASET and RSET:

$$SM = ASET - RSET$$

Safety margin interpretations:

- **SM > 0:** Safe design (evacuation completes before untenable conditions)
- **SM = 0:** Marginal case (no safety buffer)
- **SM < 0:** Unsafe design (untenable conditions before evacuation complete)