

Figure 1: Schematic diagram of the computational domain. The domain is a rectangular region with a triangular mesh. A semi-circular region of radius R_g is defined at the bottom center, with a thickness e_g . The total height of the domain is $d_l/2$. The horizontal distance from the center of the semi-circle to the right boundary is $2L_{pt} + L_{pt}$. A coordinate system (y, z) is shown at the bottom left corner.