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NUCL 355 Experiment # 5
Pre-lab problem

Please study the attached journal paper: Pressure suppression pool mixing in passive advanced BWR plants, R.E. Gamble et al., published in Nuclear Engineering and Design 204 (2001) 321–336.

(1) Using information in Figure 4 and equation (7), Plot the jet half width as function of x, (x=0 to 25) assuming r_o=1 cm

(2) Using equation (8) Plot the centerline velocity u(centerline decay) as function of x (x=4.4 to 25), use a = 4.39, r_0 =1cm, u_0 =2 m/s

(3) Using equation (9) calculate the entrainment by the jet as it moves across the pool assuming Taylor's entrainment coefficient = 0.08, and ratio x/r_0 = 20.