

Bsc Fluid Mechanics Lab Measurements

Measurement M02 Assignments

- A** Determine the velocity distribution of a cylindrical jet in the following cross-sections:
 $z_1=0 \cdot D_0$, $z_2=2 \cdot D_0$, $z_3=4 \cdot D_0$, $z_4=5 \cdot D_0$, $z_5=6 \cdot D_0$, $z_6=7 \cdot D_0$, $z_7=8 \cdot D_0$, $z_8=9 \cdot D_0$, $z_9=10 \cdot D_0$.
Take measurement points in the radial direction using the following increments ($\Delta r=2, 5$, and 10mm depending on the diameter of the jet at the given cross-section)
Set the outlet velocity of the jet to be 75% of the maximum velocity.
Check your results using the online validation program www.ara.bme.hu/lab!
- B** Determine the velocity distribution of a cylindrical jet in the following cross-sections:
 $z_1=0 \cdot D_0$, $z_2=2 \cdot D_0$, $z_3=4 \cdot D_0$, $z_4=5 \cdot D_0$, $z_5=6 \cdot D_0$, $z_6=7 \cdot D_0$, $z_7=8 \cdot D_0$, $z_8=9 \cdot D_0$, $z_9=10 \cdot D_0$.
Take measurement points in the radial direction using the following increments ($\Delta r=2, 5$, and 10mm depending on the diameter of the jet at the given cross-section)
Set the outlet velocity of the jet to be 100% of the maximum velocity.
Check your results using the online validation program www.ara.bme.hu/lab!
- C** Determine the velocity distribution of a cylindrical jet in the following cross-sections:
 $z_1=0 \cdot D_0$, $z_2=2 \cdot D_0$, $z_3=4 \cdot D_0$, $z_4=5 \cdot D_0$, $z_5=6 \cdot D_0$, $z_6=7 \cdot D_0$, $z_7=8 \cdot D_0$, $z_8=9 \cdot D_0$, $z_9=10 \cdot D_0$.
Take measurement points in the radial direction using the following increments ($\Delta r=2, 5$, and 10mm depending on the diameter of the jet at the given cross-section)
Set the outlet velocity of the jet to be 50% of the maximum velocity.
Check your results using the online validation program www.ara.bme.hu/lab!
- D** Determine the velocity distribution of a cylindrical jet in the following cross-sections:
 $z_1=0 \cdot D_0$, $z_2=2 \cdot D_0$, $z_3=4 \cdot D_0$, $z_4=5 \cdot D_0$, $z_5=6 \cdot D_0$, $z_6=7 \cdot D_0$, $z_7=8 \cdot D_0$, $z_8=9 \cdot D_0$, $z_9=10 \cdot D_0$.
Take measurement points in the radial direction using the following increments ($\Delta r=2, 5$, and 10mm depending on the diameter of the jet at the given cross-section)
Set the outlet velocity of the jet to be 80% of the maximum velocity.
Check your results using the online validation program www.ara.bme.hu/lab!
- E** Determine the velocity distribution of a cylindrical jet in the following cross-sections:
 $z_1=0 \cdot D_0$, $z_2=2 \cdot D_0$, $z_3=4 \cdot D_0$, $z_4=5 \cdot D_0$, $z_5=6 \cdot D_0$, $z_6=7 \cdot D_0$, $z_7=8 \cdot D_0$, $z_8=9 \cdot D_0$, $z_9=10 \cdot D_0$.
Take measurement points in the radial direction using the following increments ($\Delta r=2, 5$, and 10mm depending on the diameter of the jet at the given cross-section)
Set the outlet velocity of the jet to be 60% of the maximum velocity.
Check your results using the online validation program www.ara.bme.hu/lab!