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Velocity profile of water vapor inside a cavity with two axial inlets and two outlets[1] JOSÉ GUADARRAMA-CETINA, GERARDO RUIZ CHAVARRÍA, Univ Nacl Autonoma de Mexico — To study the dynamics of Breath Figure phenomenon, a control of both the rate of flow and temperature of water vapor is required. The experimental setup widely used is a non hermetically closed chamber with cylindrical geometry and axial inlets and outlets. In this work we present measurements in a cylindrical chamber with diameter 10 cm and 1.5 cm height, keeping a constant temperature (10 °C). We are focused in the velocity field when a gradient of the temperatures is produced between the base plate and the vapor. With a flux of water vapor of 250 mil/min at room temperature (21 °C), the Reynolds number measured in one inlet is 755. Otherwise, the temperatures of water vapor varies from 21 to 40 °C. The velocity profile is obtained by hot wire anemometry. We identify the stagnations and the possibly instabilities regions for an empty plate and with a well defined shape obstacle as a fashion sample.

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