Laboratory experiments on components of complex systems such as gas turbines require many conditions to be met. Requirements to be met to simulate real world conditions include inlet flow conditions such as velocity profile. The methodology to be introduced designs a velocity profile generating screen through the use of perforated plates. The velocity profile generating screen is an array of jets arranged in a manner to produce annular sections of different solidities. In an effort to better understand the interaction between perforated plates of different solidities, an experimental data set is presented to characterize the plates. This includes identification of flow regions with characterization of flow dynamics though the analysis of velocity and turbulence decay. The aim of this characterization is to determine how the perforated plate solidity affects the velocity downstream and the location of the velocity profile being produced.

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The public is welcome to attend.