Coherence of velocity fluctuations in a turbulent jet flow

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Coherence between the velocity fluctuations measured at two points is investigated in a turbulent jet flow. Different regions of the flow are observed by changing the separation between the points, distance of the points from the exit of the jet and from its central axis, and the injection velocity of the jet. It is observed that the functional form of the coherence depends on regions where it is measured. Coherence is also observed to be self-similar in different regions of the flow.



Figure 1. Schematic diagram of the experimental setup (left) and rescaled coherence curves for different values of parameters (right).