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**Asymptotic expressions for the directivity of round jets**

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Expressions for the directivity of round jets, in the high and low frequency limits, are derived, based on solutions of Lilley's equations. Two different forms of the equation in what concerns source terms representation are considered, along with general point sources of the appropriate type (i.e., equivalent stress and force sources and also, when necessary, volume sources), which are assumed to be statistically axisymmetric. Effects of mean shear and temperature gradients are accounted for, as well as of source movement. The expressions are compared with earlier ones, based on a plug flow model. The differences in the resulting expressions due to the choice of source description, which are relevant for hot jets, are discussed and used to derive a form consistent with both representations. Comparison with experimental data is also presented.