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Preferred modes in jets: comparison between different measures of the receptivity[1] XAVIER GARNAUD, LUTZ LESSHAFFT, PETER J. SCHMID, PATRICK HUERRE, CNRS - Ecole Polytechnique — The response of jets to frequency forcing is usually measured experimentally in terms of the maximum amplitude of velocity fluctuations reached along the axis (Crow & Champagne (1971)). In the present work, the preferred mode of isothermal jets is discussed in terms of the linear flow response to time-harmonic forcing (Trefethen *et al.* (1993)). The optimal frequency response is computed for different choices of the objective functional: the usual energy (L^2) norm and the maximum amplitude over the entire domain (L^∞ norm). The relevance and limitations of the different objective functionals are critically analyzed. Although the dominant flow structures are robustly identified in all cases, the measure of the flow response in terms of the maximum amplitude does not suffer from the continually slow axial growth of low frequency perturbations.

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