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## Active flow regions of fluid instabilities underpinned by a long-range feedback mechanism

A large set of fluid instabilities are sustained by a long-range feedback mechanism. In these cases, the core of the instability is not localised in space. Some examples are the fluid instabilities underpinned by an acoustic-hydrodynamic feedback-loop of cavity flows, impinging jets or the flow past an airfoil. The feedback is constituted of a convective instability, which may be an instability of the shear layer, and an acoustic pressure wave or a hydrodynamic non-local effect. Despite the fact that such a mechanism is widely accepted, a fine identification of the most sensitive spatial regions of the flow supporting the instability is missing. Herein, we propose an extension of the concept of the wavemaker or structural sensitivity to localise the active flow regions composing the feedback-loop in both incompressible and compressible flows. We illustrate the use of this technique in three canonical flow configurations.