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Linear Stability of the Incompressible Swept Hiemenz Flow: a 2D Model

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Swept attachment-line linear stability cannot be handled with a parallel theory. A more complex approach is undertaken which leads to an eigenvalue problem, written as a partial differential equations system. Discretization is based on a spectral collocation method in two directions and an Arnoldi iterative algorithm is used in order to obtain the eigenvalues. The classical Goertler-Haemmerlin (GH) mode is retrieved as the most amplified one. A series of least amplified modes, alternately even and odd, close to the GH mode, is mentionned in previous works. The sensitivity of these modes to outflow boundary conditions and towards chord computational domain are discussed.

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