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Different sorts of unsteadiness in shock induced separation[1]
JEAN-PAUL DUSSAUGE, SEBASTIEN PIPONNIAU, IUSTI/CNRS/Univ. Aix-Marseille, LOUIS-JACQUES SOUVEREIN, TU Delft/the Netherlands, PIERRE DUPONT, JEAN-FRANCOIS DEBIÈVE, IUSTI/CNRS/Univ. Aix-Marseille —
The unsteadiness observed in shock induced separation may be produced by different mechanisms which lead in all cases to low frequency motions. This is discussed in some cases: impinging oblique shocks (with well developed and incipient separation), compression ramp flows. A scenario based on mass conservation in the separated zone is proposed to explain the low frequency unsteadiness in separated impinging shock cases, when separation is followed by reattachment. This seems also to give a right evaluation of the unsteadiness frequency in different cases of compression ramp flows, although in many cases, the perturbations of the incoming boundary layer still play a role. In the case of incipient separation produced by an oblique shock reflection, intermittent separation is put in evidence. In such conditions the relevance of the previous analysis is examined and discussed for the separated and non separated events.

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Jean-Paul Dussauge
IUSTI/CNRS/Univ. Aix-Marseille

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