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Autore	Ren Jie
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Sommario/riassunto	This thesis first reveals the mechanism of Görtler instabilities and then demonstrates how transitions at hypersonic flows can be effectively controlled (either promoted or suppressed) with Görtler or Klebanoff modes. It focuses on understanding and controlling flow transitions from mild laminar to fully turbulent flows at high speeds— aspects that have become crucial at the dawn of an incredible era, in which hypersonic vehicles are becoming available. Once this occurs, it will be possible to travel from Beijing to Los Angeles within just 2 hours, and we will all live in a genuinely global village—and not just virtually, but physically. Görtler instabilities have often been used to promote flow transition in hypersonic vehicles. However, how Görtler instabilities are excited and how they evolve in hypersonic flows are questions that have yet to be answered.

