

## INTRODUCTION

Some aspects of the measuring techniques which can be used to survey the turbulent boundary layer at hypersonic<sup>+</sup> Mach numbers will be discussed in this short note. We have restricted ourselves to experiments in short duration facilities since instrumentation in hypersonic continuously operating wind tunnels is similar to supersonic and hypersonic  $M < 8$  facilities. Although it is not the purpose to give a review of the development of hypersonic wind tunnels, a short overview of the reasons which have led to the use of short duration facilities, is given in the first section. This will also give a first idea about some properties that have to be imposed on the instruments. In the second section, some characteristics of the hypersonic turbulent boundary layers will be discussed, and the properties which have to be measured will be identified accordingly.

Section 3 gives a sample list of different techniques which have been or can be used to measure some important mean flow properties. One of these measurements, the measurement of stagnation temperature will be further discussed in section 4.

In the last section, some remarks about the turbulence model in these very high Mach number boundary layers will be made.

<sup>+</sup> In this text, "hypersonic" is used to indicate a flow with  $M > 8$  unless mentioned otherwise