

THE MEASUREMENT OF VELOCITY IN HOT MEDIA

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In this paper we shall attempt to review some of the methods used to measure velocities in hot conducting media such as those found in arc discharges and furnaces at atmospheric or higher pressures.

In such media the temperatures and pressures are often known and the velocity is the crucial quantity required to establish a meaningful energy or momentum balance.

The range of methods available is very wide, it includes methods based on an application of all three of the conservation equations, for mass, momentum on energy; methods based on electromagnetic interactions, spectroscopic and scattering measurements. Each of these headings may be further divided according to whether or not an active measurement or whether or not the original flow field has been modified.

A survey of some of these possibilities underlines the necessity of choosing the most appropriate method not only in terms of the prevailing experimental situation, but also according to the body of measurements already accumulated.