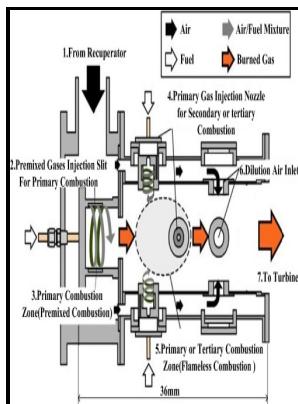


# Experimental diagnostics in gas phase combustion systems

American Institute of Aeronautics and Astronautics - Experimental Investigation of the Influence of Water Injection on Acoustic Properties of the Exhaust System of a Gas Turbine Combustion Test Rig



Description: -

-Experimental diagnostics in gas phase combustion systems

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## OSA

Overall, field data collection is demanding and potentially dangerous; however, it is considered the best alternative for improving and validating the fire spread models Morandini et al.

## Combustion Diagnostics

This can be well explained by the sequences in. The beam prevents further reaction by rapidly expanding the gas stream through which intermolecular distances become greater than collision distances. It should be noted that, even if high radiation levels of the same order of magnitude can be obtained in the laboratory using radiant heaters, the heating rates are not representative of a travelling fire front since samples are submitted to a constant heat flux.

## NHESS

In view of these limitations, the aim of this study is to propose kinetic models adapted to realistic Mediterranean forest fire conditions. Figure 4 Differential mass-loss prototype placed in the middle a and at the end b of the fuel bed.

## Non

This sample thickness is responsible for the incomplete degradation. At the second step, these initial data are used in a model-fitting technique to obtain the pre-exponential factor and the nth-order model. Introduction Thermo-acoustic instabilities are frequently observed in various combustion systems, including aero engines and gas turbines.

## Imaging diagnostics of combustion instability in premixed swirling combustion

The first process is modelled as 4. Scalars of interest are temperatures, chemical species concentrations, or rate of mixing between fuel and oxidant. The behaviour of the temperature indicates that the effect of the fire front on the prototype can be considered a straight line.

### **Exhaust Gas Analysis in a Catalytic Combustion System With a Methane Mixture**

The distance between each supporting tube 500 mm was chosen such that the decomposition of a particular branch could not affect the neighbouring branch. However, according to our knowledge, accuracy measurements of mass loss have never been done in field experiment conditions.

### **Spray Combustion**

The flame dynamics under external-force excitation was studied by using ICCD, which states unsteady heat release is due to the velocity pulsation. Thus, the mode of 38 Hz is corresponding to LF Low Frequency mode.

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