

Research and Technology Test Facility P8

DLR site Lampoldshausen

brief description

The P8 research and technology test facility was built in 1995 for testing subscale hydrogen/oxygen rocket combustors with two test cells. Since then, the P8 has been supplemented with supply systems for methane, liquefied natural gas and ethanol. In 2020, a third test cell was commissioned to study the behavior of complete liquid rocket engine cycles.

goals

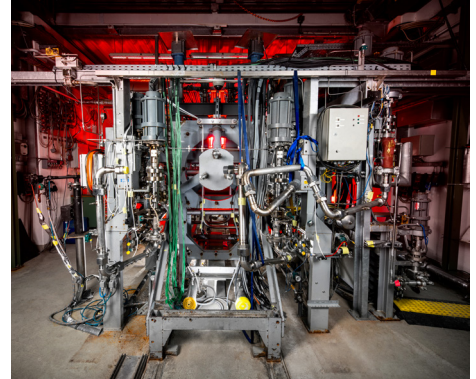
- Scientific investigations of chemical and physical processes in rocket combustion chambers and other components of rocket propulsion systems
- Development tests for novel designs and manufacturing processes of subscale propulsion components
- Qualification tests of components for rocket propulsion systems in the full-scale

applications

- Experiments with research and technology models of rocket engines with different propellants
- Development of test facility components: Noise attenuators during operation of rocket engines
- Simulation of real flight conditions in a vacuum by a mobile altitude system

perspectives

- Complete propulsion systems and individual turbopumps can be operated on a subscale with the fuels hydrogen and methane in the new P8.3 test cell



involved

DLR
CNES
ArianeGroup

facts and figures

- Up to 100 test days per year with 2 to 3 hot runs per day
- Over 20 years of operation with more than 1400 test days
- Highest combustion chamber pressure: 330 bar
- Media in use: liquid oxygen, gaseous and liquid hydrogen, Helium, gaseous & liquid nitrogen, gaseous methane and LNG (liquid natural gas), ethanol, propane, Cooling water

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In order to be able to test turbopumps and entire rocket propulsion systems on a reduced scale in the future, the new P8.3 test stand has a low-pressure supply system. DLR Lampoldshausen is thus expanding its extensive test portfolio to include an important aspect in the field of research and development.

