S17 – Liquid rocket engines

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Rocket propulsion is a kind of jet propulsion device that generates propulsive force by ejecting a loaded substance called a propellant. Liquid rocket engines usually consist of turbomachines, combustion chambers and nozzles, propellant tanks, propellant supply devices, etc.

The rocket engine has a high energy density and is a complex system to achieve high propulsion performance. Therefore, each engine element is required to have high reliability in addition to strict design and manufacturing specifications.

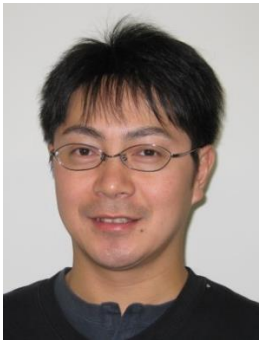
Rocket engines are accompanied by complex physical phenomena, and unsteady phenomena are likely to occur in many engine components.

The **Liquid Rocket Engines** session of ISROMAC 18 will cover various topics related to liquid rocket engines. In addition, submissions of systems and elements related to aircraft engines and future propulsion systems are welcome.

Non-exhaustive list of suggested topics

- Hybrid rocket engines and jet engines
- Turbopump systems, impellers, inducers, turbine, bearings, seals, and rotors
- Rotordynamic fluid force and moment, and rotordynamic coefficients
- Propulsion systems, engine cycles, and propellants
- Engine components (combusiton chamber, nozzle extension, valve, etc.)
- Instability phenomena (Pogo, cavitation, combustion, rotor system, etc.)
- Design, optimization, manufacturing, fabrication, tests, performance, etc.

Organizers



Masaharu Uchiumi is a Professor at Muroran Institute of Technology (MuIT), Japan. He was been engaged in research and development of rocket engines, especially turbomachinery, at JAXA and MuIT. He is also conducting research in the area of combustion and turbomachinery for hybrid rocket, jet engine, air-breathing engine, and detonation engine.

Dr. Angelo Pasini carried out his PhD in chemical propulsion at Pisa University. Since September 2006, he has been working at the Chemical Propulsion Laboratory of Sitael, formerly Alta, (Pisa, Italy), mainly on green propellant rockets and on experimental campaigns on pumps for liquid propulsion rockets. His fields of interest are Turbomachinery, Cavitation, Rotordynamics and Flow Instabilities in Space Rockets Turbopumps, Non-Toxic Propellants and Catalytic Beds for Hydrogen Peroxide Decomposition. He is currently Assistant Professor of Space Propulsion at Pisa University.

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