ASCENT Project 73

Fuel Composition Impact on Combustor Durability

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Cost Share Partner: Fuel producers, engine/airframe OEMs

Objective:

Understand and characterize the **impact of fuel composition on gas turbine combustor liner lifetime**

Project Benefits:

Determine impact of alternative fuels on combustor liner lifetime

Quantify/qualify **potential benefits for combustor liner lifetime from alternative jet fuel use**

Minimize (hopefully eliminate) engine durability issues with use of alternative fuels

Research Approach:

Develop radiative heat transfer measurement system for referee combustor

Initial experiments to evaluate operating points and sensitivity

Test fuels with varying composition

Unfortunately, laboratory access time has been limited due to AFRL COVID rules

Major Accomplishments (to date):

Purchase of IR windows for referee combustor

Developed hardware plans for installation of surface thermocouples and IR camera/radiometer

Developed plans for piggy-back runs on referee rig with AFRL cooperation

Future Work / Schedule:

Proceed with research approach toward beginning testing late 2021/early 2022

This research was funded by the U.S. Federal Aviation Administration Office of Environment and Energy through ASCENT, the FAA Center of Excellence for Alternative Jet Fuels and the Environment, project 73 through FAA Award Number 13-C-AJFE-UD under the supervision of Dr. Anna Oldani. Any opinions, findings, conclusions or recommendations expressed in this this material are those of the authors and do not necessarily reflect the views of the FAA.