

PROJECT

ESTiMatE

Emissions Soot ModEl

Funding: European (Horizon 2020)

Duration: Nov 2018 - Oct 2021

Status: Ongoing

Total project cost: €1,799,875

EU contribution: €1,799,875



Call for proposal: H2020-CS2-CFP07-2017-02

[CORDIS RCN : 221377](#)

Objectives:

The main objective of ESTiMatE is to develop a modelling strategy using CFD simulations for the prediction of soot in terms of chemical evolution and particle formation in conditions relevant to aero engine operation. The model developments are based on the use of detailed chemical kinetics for kerosene surrogates, and advanced combustion and spray models validated with reference experiments.

ESTiMatE develops an advanced methodology based on advanced soot prediction models integrated into high-fidelity simulations. It includes the development of efficient algorithms for the coupling of soot particles with gas phase dynamics allowing the use of large-scale applications with high computational efficiency.

ESTiMatE will contribute to the characterization and prediction of the combustion process and subsequent emissions, to increase the predictivity and reliability of soot predictions in the aeronautical sector.

Parent Programmes:

[H2020-EU.3.4. - Horizon 2020: Smart, Green and Integrated Transport](#)

Institute type: Public institution

Institute name: European Commission

Funding type: Public (EU)

Other programmes: JTI-CS2-2017-CfP07-ENG-03-20 Emissions prediction for very large bypass ratio turbofans

Lead Organisation:

Barcelona Supercomputing Center - Centro Nacional De Supercomputacion

Address:

Calle Jordi Girona 31
08034 BARCELONA
Spain

Organisation Website:

<http://www.bsc.es>

EU Contribution: €231,000

Partner Organisations:

Technische Universitat Berlin

Address:

STRASSE DES 17 JUNI 135
10623 Berlin
Germany

Organisation Website:

<http://www.tu-berlin.de>

EU Contribution: €252,500

Karlsruher Institut Fuer Technologie**Address:**

Kaiserstrasse
76131 Karlsruhe
Germany

Organisation Website:

<http://www.kit.edu>

EU Contribution: €226,375

Technische Universitat Darmstadt**Address:**

KAROLINENPLATZ 5
64289 DARMSTADT
Germany

Organisation Website:

<http://www.tu-darmstadt.de>

EU Contribution: €273,750

Universitat Politecnica De Valencia**Address:**

Camino De Vera S/n
46022 Valencia
Spain

Organisation Website:

<http://www.upv.es>

EU Contribution: €240,000

Universitaet Paderborn**Address:**

Warburger Strasse 100
33098 Paderborn
Germany

Organisation Website:

<http://www.uni-paderborn.de>

EU Contribution: €280,000

Technische Universiteit Eindhoven**Address:**

Den Dolech
5612 AZ Eindhoven
Netherlands

Organisation Website:

<http://www.industrialdesign.tue.nl>

EU Contribution: €296,250

Technologies:

Aircraft propulsion

CFD modelling of fuel spray behaviour and soot formation

Development phase: Research/Invention

STRIA Roadmaps: Vehicle design and manufacturing

Transport mode: Air transport

Transport sectors: Passenger transport, Freight transport

Transport policies: Other specified

Geo-spatial type: Other