

XXVI FLUID MECHANICS CONFERENCE
Warszawa, 10-13 September 2024

**Some aerodynamic challenges of the future
sustainable commercial aircraft**

L P Ruiz-Calavera^{1,2}

¹ Airbus Defence & Space, Flight Physics CoC, Getafe, Spain

² Universidad Politécnica de Madrid, Department of Aircraft and Space Vehicles, Madrid, Spain

E-mail: luis.ruiz.calavera@upm.es

The Aviation Industry has committed to net-zero carbon emissions in global civil operation by 2050. To achieve this goal the next generation of commercial aircraft will need to incorporate new technologies to significantly increase the aerodynamic efficiency and to make use of new types of power plants and energy sources. This will result in the need to evolve the aircraft configuration and to bring to a robust operational standard technologies that have so far not been routinely used on large airlines. Industry is actively exploring these concepts while developing the technology bricks that would enable them. This talk will review some of these technologies in the aerodynamics field and will present Airbus' view on the still existing gaps that need to be matured before they find practical implementation in the future sustainable commercial aircraft.