Special Issue

Mitigation Strategies for Aviation's Climate Impact

Message from the Guest Editor

This Special Issue focus on mitigation strategies for the climate impact of aviation. Civil aviation satisfies modern society's needs for mobility and is an essential economic driver. Air transportation demand is forecast to increase by approximately 4.4% annually in the coming decades. The overall climate impact of aviation constitutes approximately 5% of the total anthropogenic causes of global warming. Both CO2 and non-CO2 effects from NOx, H2O, contrails, and particulates contribute to this. Due to its long lifetime, the climate impact of aviation from CO2 is mainly determined by CO2 emissions. On the contrary, the short-lived non-CO2 effects depend not only on the emissions but also on the geographical location, altitude, time, and local weather conditions. To effectively mitigate the climate impact of aviation, considerations of technological improvements attributed to designs, structures, materials, energy sources, etc., and sustainable operations, are required. This Special Issue will present state-of-the-art research, review recent achievements, and provide a strategic perspective of future directions in environmentally sustainable aviation.

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