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SPACE CLIMATE CHANGE MONITORING OF CONTRAILS AND CIRRUS CLOUD AND
ANTHROPOGENIC INITIATIVES FOR THEIR ABATEMENT

Abstract

Commercial aviation is experiencing the fast growth exceeding automotive travel; the latter is well known for contributing to air pollution. Commercial aviation impacts climate by two main avenues: the emission of greenhouse gases and cloud effects. While the former impact is similar to other activities that contribute to anthropogenic climate change, the latter is unique to aviation. Anthropogenic solutions that can be offered by Aerospace Technology to address anthropogenic environmental changes, known as green technology initiatives, may only provide partial or temporary solutions. In the efforts to intervene such process and thus maintaining the sustainability of the earth's environment, some scientific and technological guidelines to comprehend the natural phenomena and global changes are reviewed and discussed and selected efforts devoted to aircraft technology and aviation, for maintaining the sustainability of the earth's environment are elaborated. Particular considerations are given to fuel burn affecting greenhouse gases and cloud effects due to trailing vortices and hence contrail. Space climate change monitoring of these contrails and contrail-related cirrus cloud is then necessary, and the initiatives are discussed.