



TEAM_Play – Tool Suite for Environmental and
Economic Aviation Modelling for Policy Analysis

ADMS-Airport

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Introduction of TEAM_Play tool: ADMS-Airport

- ADMS – Airport: air quality management at airports.
Advanced **dispersion** and emissions model
- **Dispersion:**
 - Moving jet-source treatment of aircraft emissions, important for the high momentum, buoyant take-off ground roll sources.
 - Detailed temporal profiles. Chemistry module for NO_x-NO₂ and sulphate chemistry. Street canyon model for road transport.
 - Used for various airports, notably for London's Heathrow airport as part of the UK Department for Transport's *Project for Sustainable Development of Heathrow*.
- www.cerc.co.uk/environmental-software/ADMS-Airport-model.html

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Introduction of TEAM_Play tool: ADMS-Airport

- ADMS – Airport: air quality management at airports. Advanced dispersion and **emissions** model
- **Emissions:**
 - Calculation of all aircraft and airport emissions, including APU and GSE. Aircraft main engine emissions calculated using an ECAC Doc-29 flight performance model with BFFM2 and FOA for particulates.
 - Calculation of non-airport emissions from the surrounding area including road and rail transport, commercial and domestic sources.
- www.cerc.co.uk/environmental-software/ADMS-Airport-model.html

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ADMS-Airport enhancements in TEAM_Play

- Developed pre-processors and post-processors to link ADMS-Airport to the tool suite:
 - movement journals,
 - aircraft layout (runways, taxiways),
 - meteorological data,
 - engine emissions database,
 - aircraft types,
 - ANP mapping table,
 - calculated emissions (output).

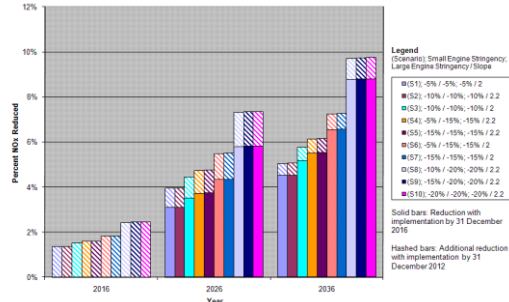
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Some ADMS-Airport results:



Modelled NO₂ concentrations around Heathrow, 2002 base case (µg/m³)
 [From "Adding Capacity at Heathrow Airport – Air Quality Studies for Heathrow", 2007]



Policy scenario analysis presented at ICAO CAEP/8: Global NO_x emissions for NO_x stringency scenarios



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