

CORRESPONDENCE:

# A cloudy picture

**To the Editor** — We read with interest the article ‘Global radiative forcing from contrail cirrus’ in the April 2011 issue of *Nature Climate Change*. The aviation sector is pleased to see more research in the field of aviation contrails and the furthering of scientific understanding. However, we are still a long way from an agreement on the climate impact of contrails and related cirrus cloud.

There is significant uncertainty across the climate science field as to the exact impact of clouds on the climate system, and even more uncertainty as to how to address cloud effects within global

climate models. Perhaps the fact that the word ‘uncertain’ appears 13 times in this short *Nature Climate Change* Article is evidence of the large degree of confusion surrounding the topic. Theoretically, contrail formation can be avoided by airlines flying at lower altitudes, or by air traffic control routing aircraft around the specific atmospheric conditions in which contrails are formed. However, this would lead to increased carbon dioxide emissions if aircraft are not flying at optimum altitudes for flight efficiency, and the practicalities of such measures are untested. Until we have a much better

understanding of cloud effects and the associated uncertainties, it would be unwise to act on the modelled results of individual studies.

In the meantime, the industry is involved in scientific research to better understand the effects of contrails and has been engaged in research projects for technologies in engine designs that may be able to avoid contrail formation in the future. □

---

**Paul Steele**

Executive Director, Air Transport Action Group, Geneva. <http://www.atag.org>