

Contrail frequency over Europe from NOAA-satellite images

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Abstract. Contrail cloudiness over Europe and the eastern part of the North Atlantic Ocean was analyzed for the two periods September 1979 - December 1981 and September 1989 - August 1992 by visual inspection of quicklook photographic prints of NOAA/AVHRR infrared images. The averaged contrail cover exhibits maximum values along the transatlantic flight corridor around 50 °N (of almost 2%) and over western Europe resulting in 0.5% contrail cloudiness on average. A strong yearly cycle appears with a maximum (<2%) in spring and summer over the Atlantic and a smaller maximum (<1%) in winter over southwestern Europe. Comparing the two time periods, which are separated by one decade, shows there is a significant decrease in contrail cloudiness over western Europe and a significant increase over the North Atlantic between March and July. Contrail cloud cover during daytime is about twice as high as during nighttime. Contrails are found preferentially in larger fields of 1000 km diameter which usually last for more than a day. Causes, possible errors and consequences are discussed.

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