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Sensitivity of linear contrail radiative forcing

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A parameterization of the radiative forcing linked to persistent linear-contrails in terms of their temperature was developed and used to assess their radiative forcing sensitivity to the uncertainties linked to their horizontal cover extent and their particle shape, size and concentration. Our characterization of persistent contrails is based on a cirrus ice water content climatology and on midlatitude cirrus size distribution retrievals. Despite the large variability in the observed ice water contents, particle shapes and particle sizes, the uncertainties in the calculated radiative forcing of persistent contrails remain mainly linked to the extent of their horizontal cover.