

(a)

## Aviation emission



organics

fresh soot

## Contrail formation and sublimation

Contrail  
processed soot

## Cirrus formation

?

Terrestrial  
radiation

?

Background  
aerosol

Solar radiation  
? ?

(b)



Aircraft engine

HINC1: Contrail cloud chamber  
( $T = 228 \text{ K}$  and  $\text{RH}_w = 105 \%$ )

DMA  
SMPS1  
CPC

CATZ: Sublimation flow tube

TEM2

TEM1

HINC2: Cirrus cloud chamber  
( $T = 218-228 \text{ K}$  and  $\text{RH}_w = 70-105 \%$ )

OPC  
DMA  
SMPS2  
CPC  
DMA  
CPMA  
CPC