

# ACE Chlorine Species

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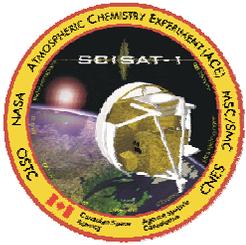


# ACE Cl Species Data

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ACE-FTS provides profiles of HCl, ClO, and ClONO<sub>2</sub>

- ACE-FTS v2.2
  - Retrievals cover range from (km):  
HCl: ~5 to 55, ClONO<sub>2</sub>: ~12 to 35, ClO: ~12 to 30,
  - Microwindows used:  
HCl: 13 between 2727 and 2961 cm<sup>-1</sup>  
ClONO<sub>2</sub>: 780 and 1292 cm<sup>-1</sup>  
ClO: 821 - 846 and 854 - 862 cm<sup>-1</sup>
  - Added HOCl to list of retrieved species (~8 to 18 km)
  - ClO profiles tend to have oscillations – best to use averages

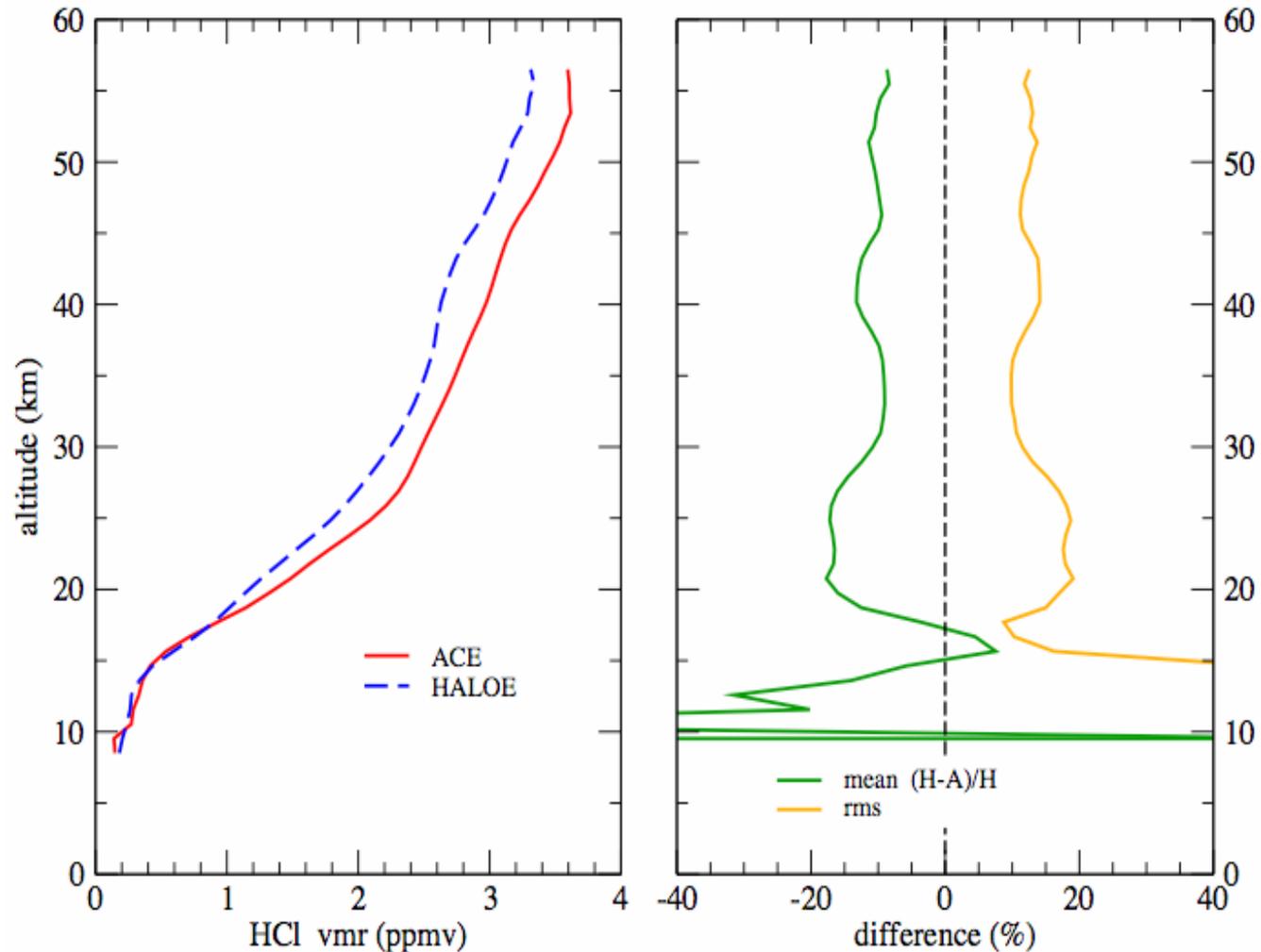


# HCl: ACE-FTS - HALOE

ACE-FTS and HALOE are within  $\pm 10\%$  below 20 km  
10 – 20% higher from 20 to 48 km

29 Coincident Events in July 2004 at  $\sim 66$  N (within 500 km and 3 hours) plus 2 on Jan 17 (60 S) and 1 on Feb 12 (48 N) in 2004

ACE-FTS version 1.0, HALOE v19

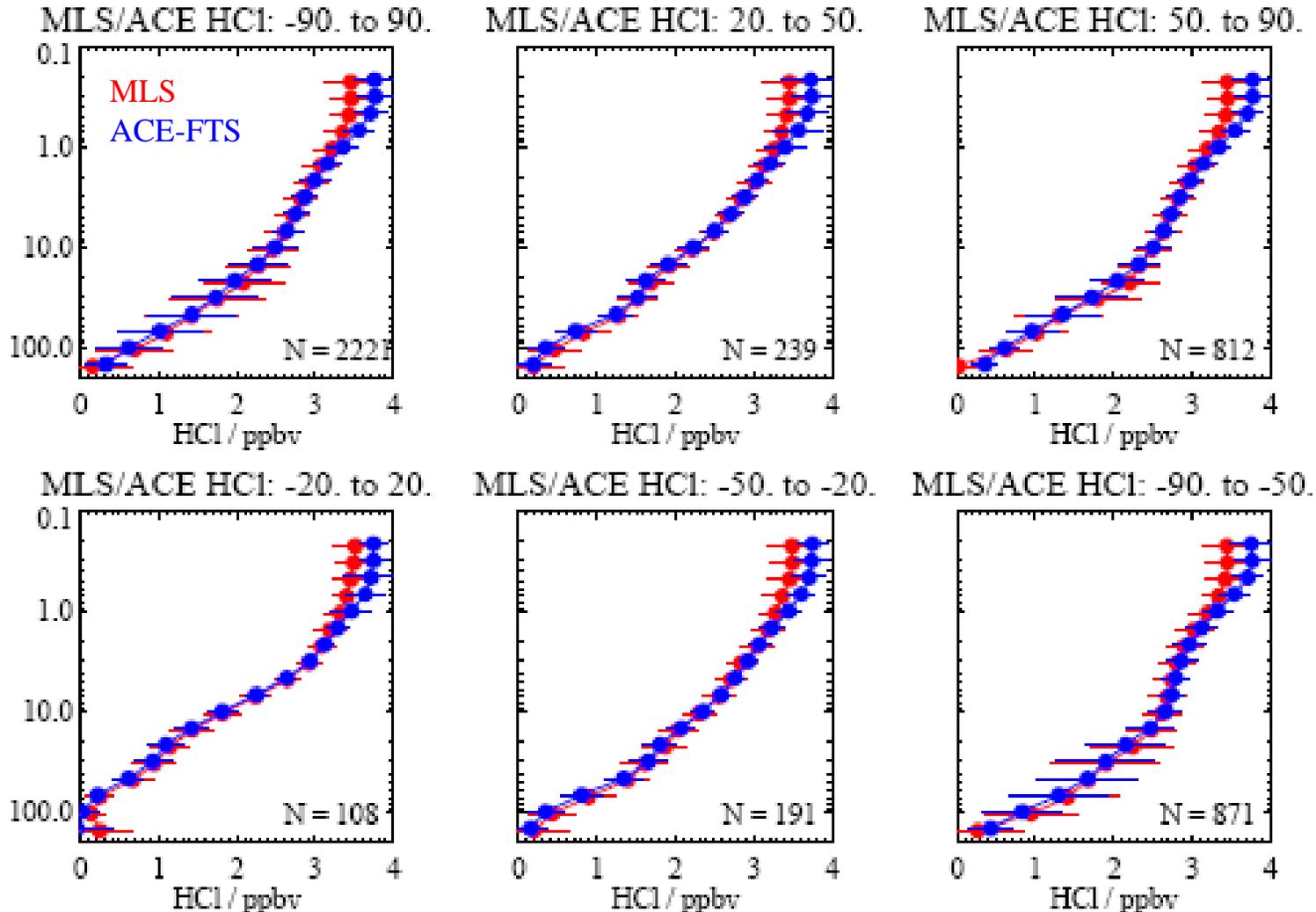


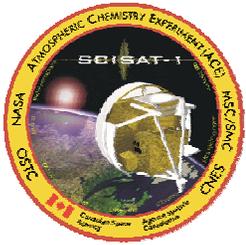
Marty McHugh



# HCl: ACE-FTS vs. MLS

Above 1 hPa,  
ACE-FTS is  
up to 10%  
higher than  
MLS

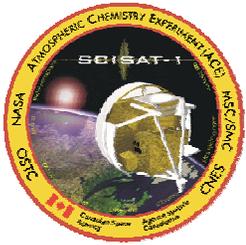




# Improvements in ACE-FTS

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- HCl microwindows were updated in v2.0
  - No real change in comparisons
- Recently, HCl retrievals have been extended to 60 km
  - No significant change in profile shape
  - Work continuing to look at VMR values in latitude bands
- Important to understand for the Cl budget
  - Discrepancy between MLS and ACE-FTS at high altitudes needs to be investigated
  - Near 60 km, most Cl is HCl



# ACE Cl species data available

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- Newest ACE data to be put into AVDC
  - ACE-FTS v2.2 will be in very soon
- Further comparisons underway / planned
  - ClONO<sub>2</sub> vs. MIPAS
  - ClO vs. MLS
  - HOCl vs. MLS – need to take closer look
  - ClONO<sub>2</sub> vs. HIRDLS?