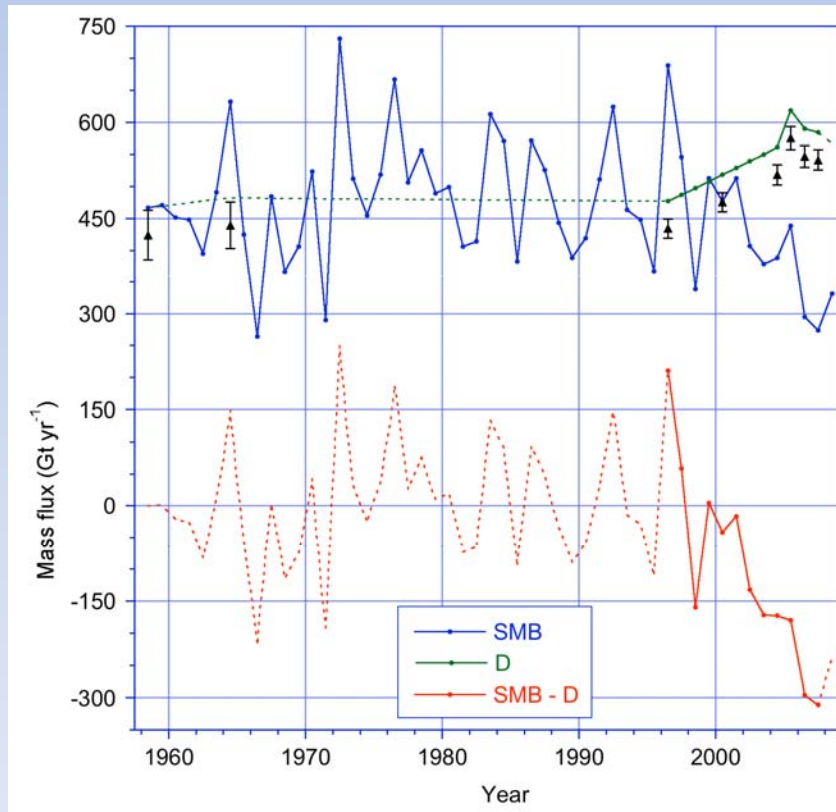


# GrIMlce: The Greenland ice sheet model intercomparison exercise

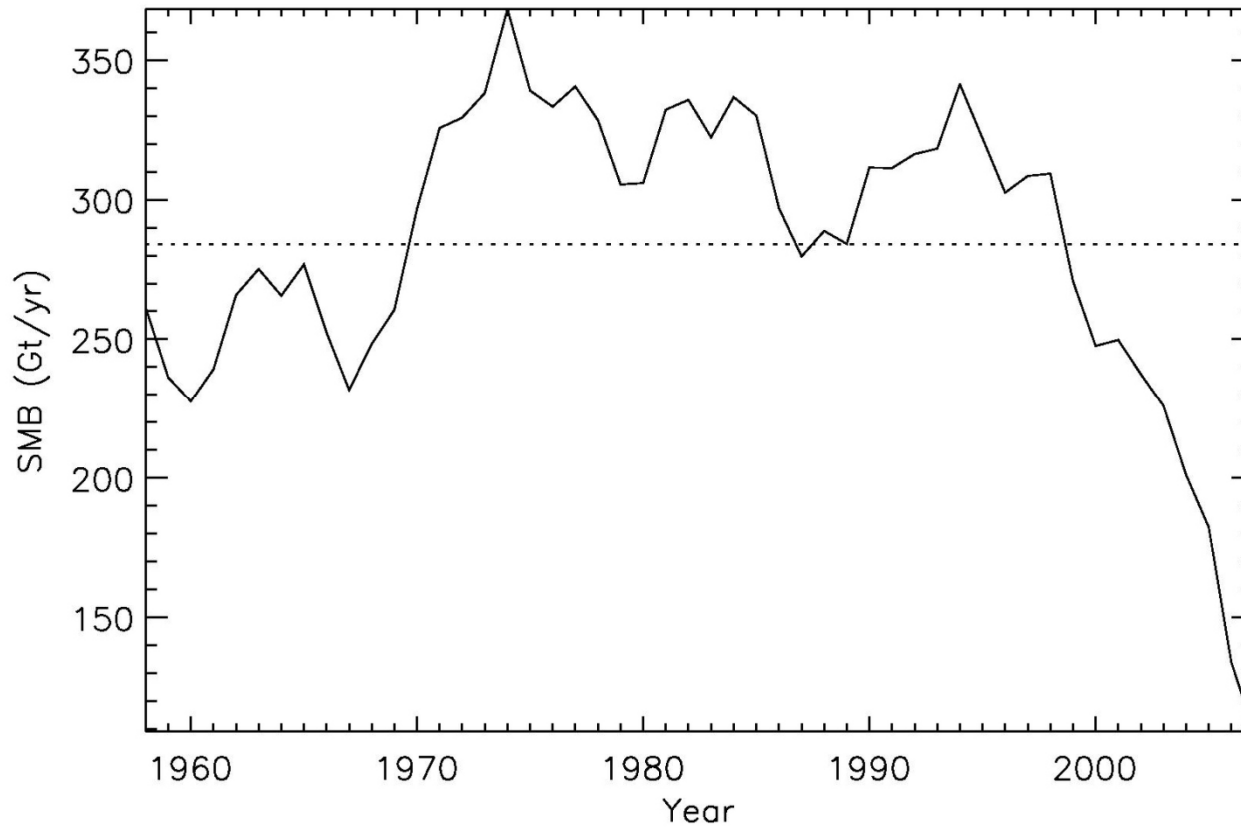
Jonathan Bamber, Jason Box, Michiel  
van den Broeke, Xavier Fettweis,  
Edward Hanna

# A little background part I

- SMB responsible for  $\sim$  half mass loss from GrIS
- Last  $\sim$ decade  $\Delta$ SMB =  $\Delta$ discharge:



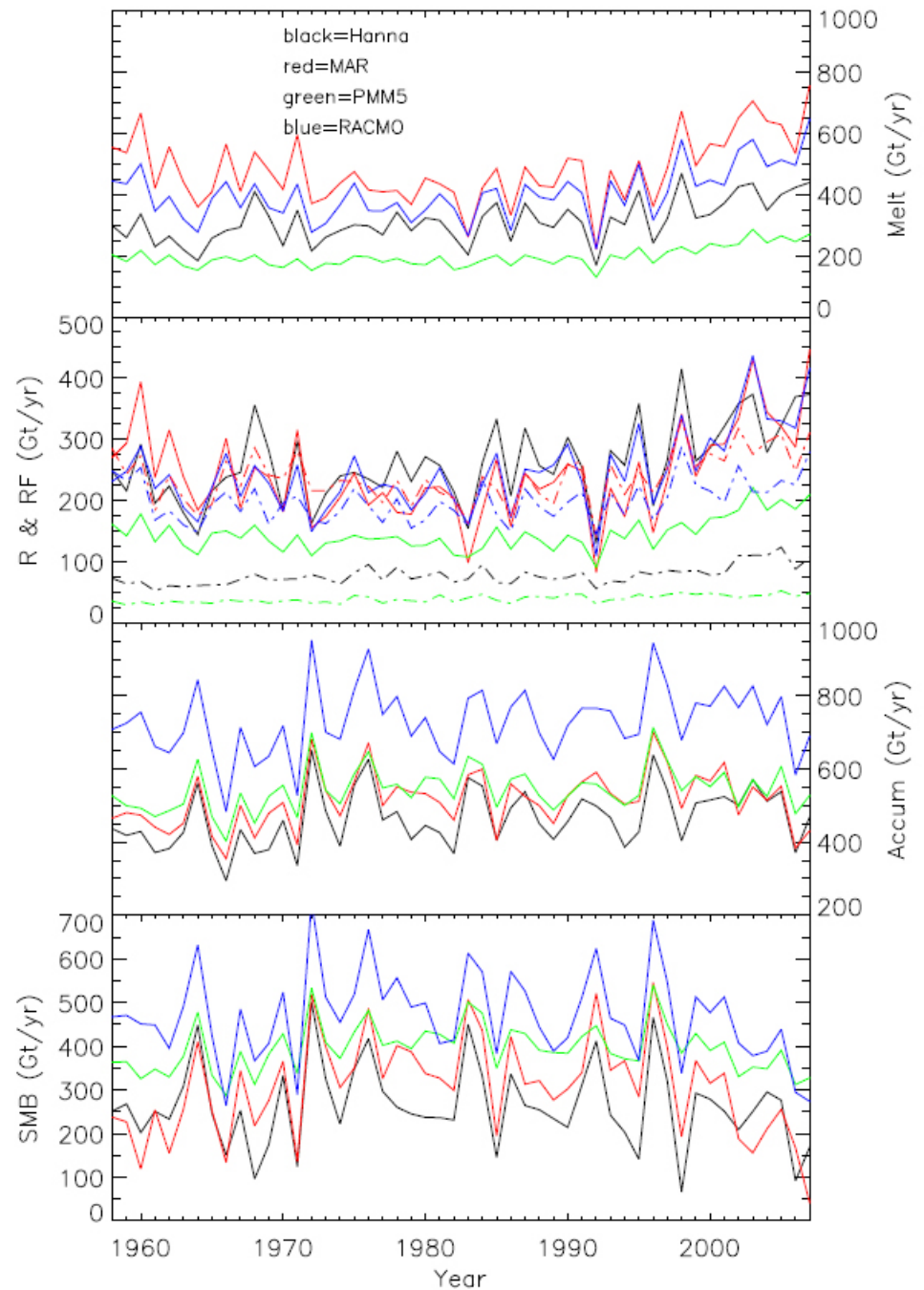
# RACMO SMB:



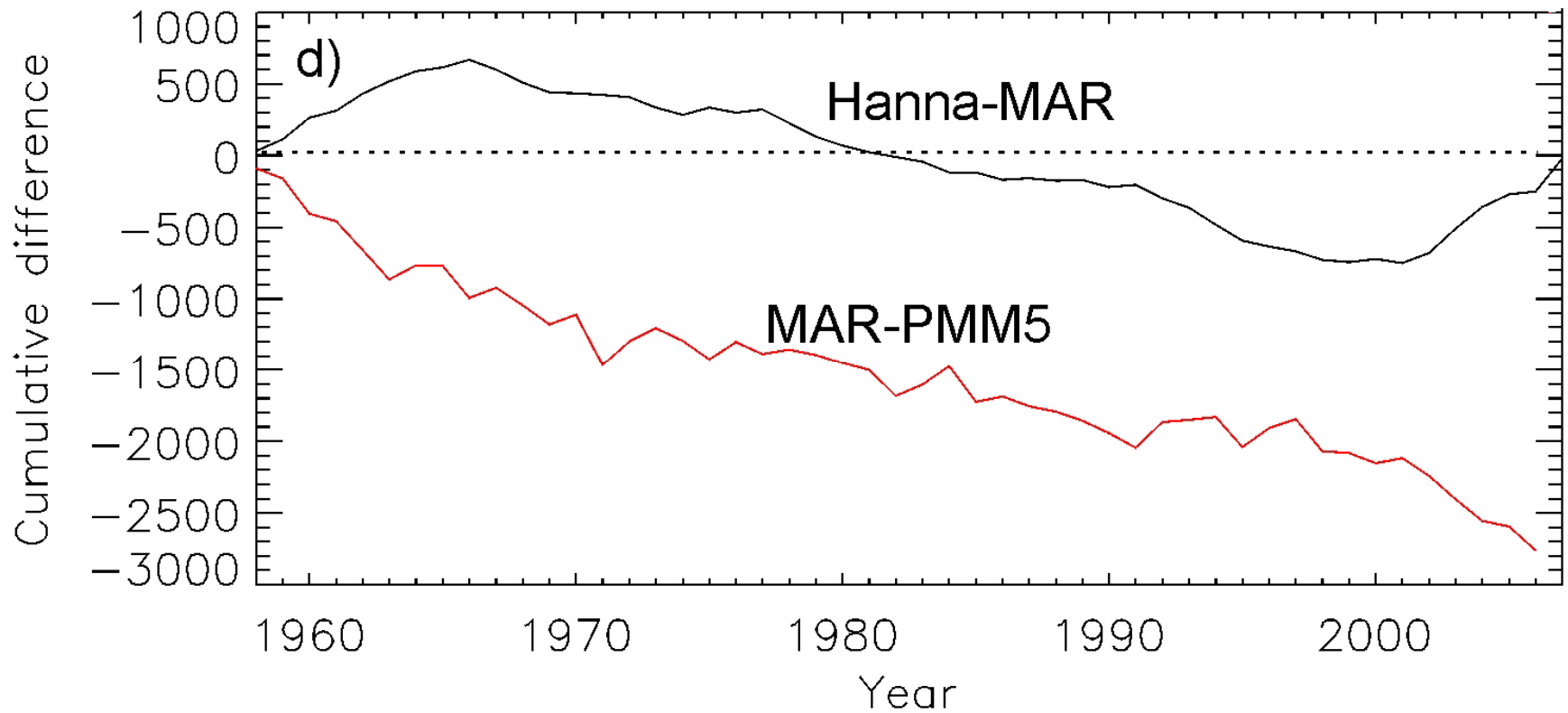
# A little background, part II

- ECMWF re-analysis back to 1958 plus operational analysis to present
- => reconstruct Greenland SMB
  - Hanna: simple interpolation scheme + PDD melt
  - Box: PMM5 (now using WRF)
  - Fettweis: Modele Atmospherique Regional (MAR)
  - Broeke: RACMO/GR (ECMWF forecast model)

# How well do we know SMB?



# Cumulative differences:



# Conclusions

- Big differences in all components
- Refreezing has ?
- Accumulation has ?
- SMB responsible for  $\sim$  half mass loss over last decade but