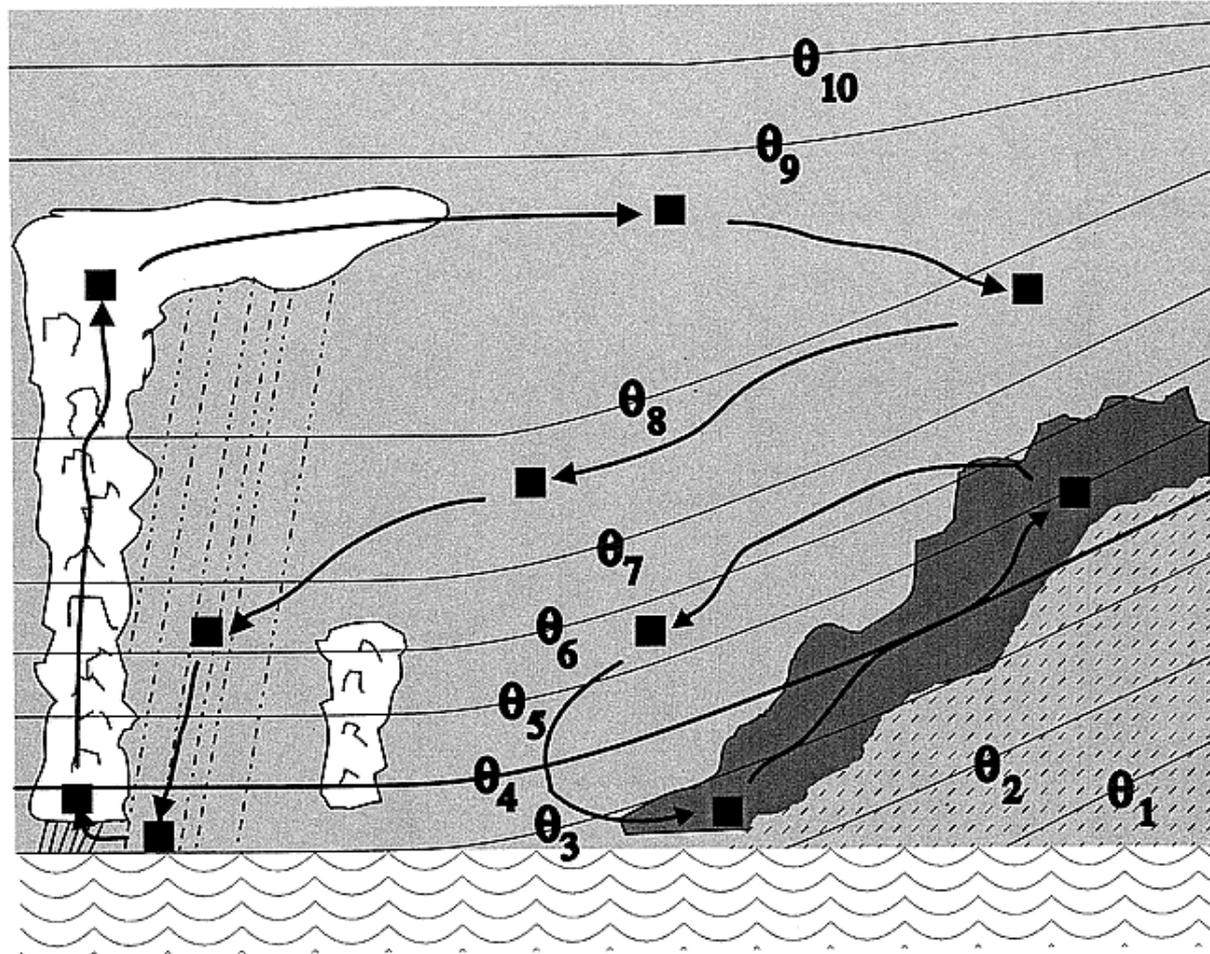


MIT OpenCourseWare
<http://ocw.mit.edu>

12.842 / 12.301 Past and Present Climate
Fall 2008

For information about citing these materials or our Terms of Use, visit: <http://ocw.mit.edu/terms>.

Flux of water by convection makes real problem complex



www.ghcc.nasa.gov

1 Sep 2000
19:15 UTC

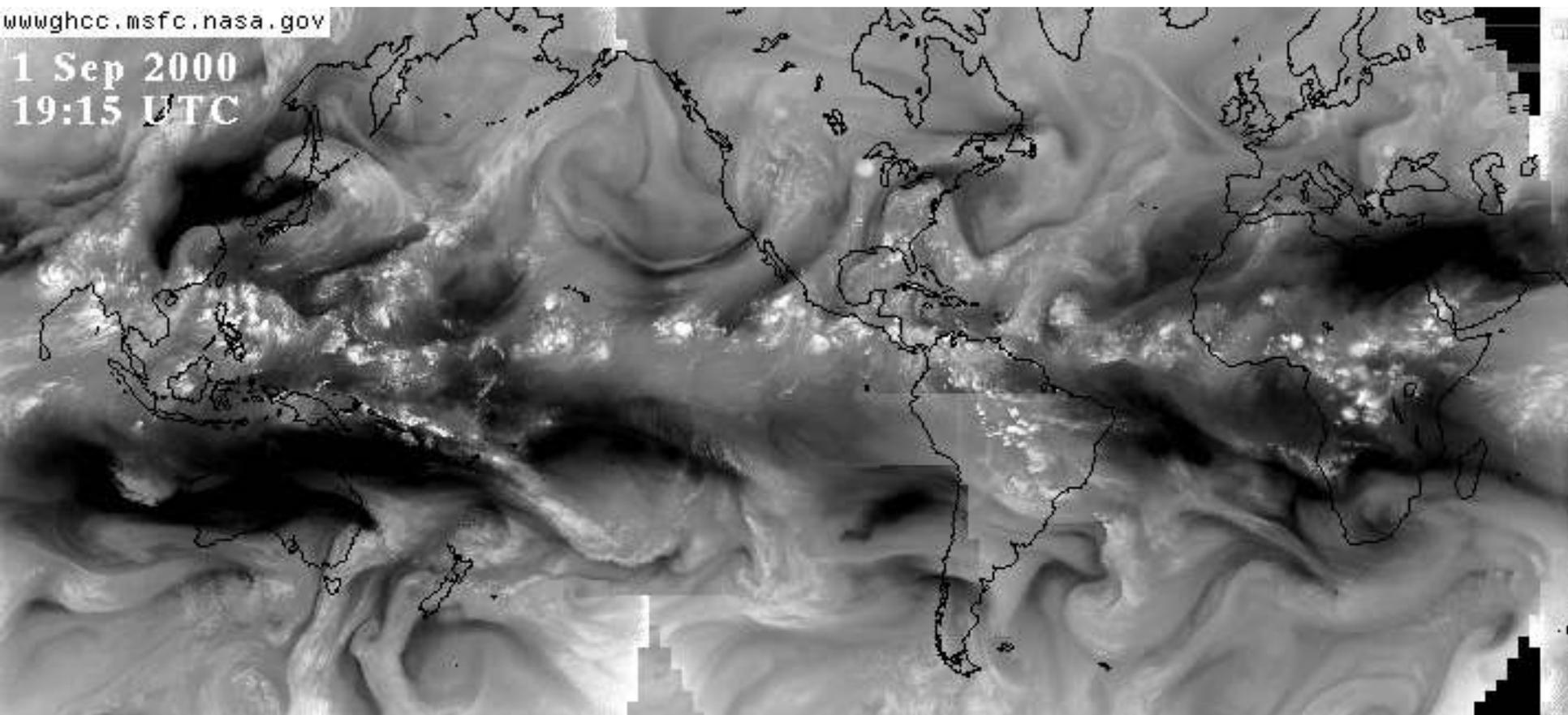


Image courtesy of NASA.

Frequency histogram of rawindsonde relative humidities from 1600 ascents at the tropical Pacific islands of Yap, Koror, Ponape and Majuro, January-May, 1994-95. Spencer and Braswell, *Bull. Amer. Meteor. Soc.*, 1997.

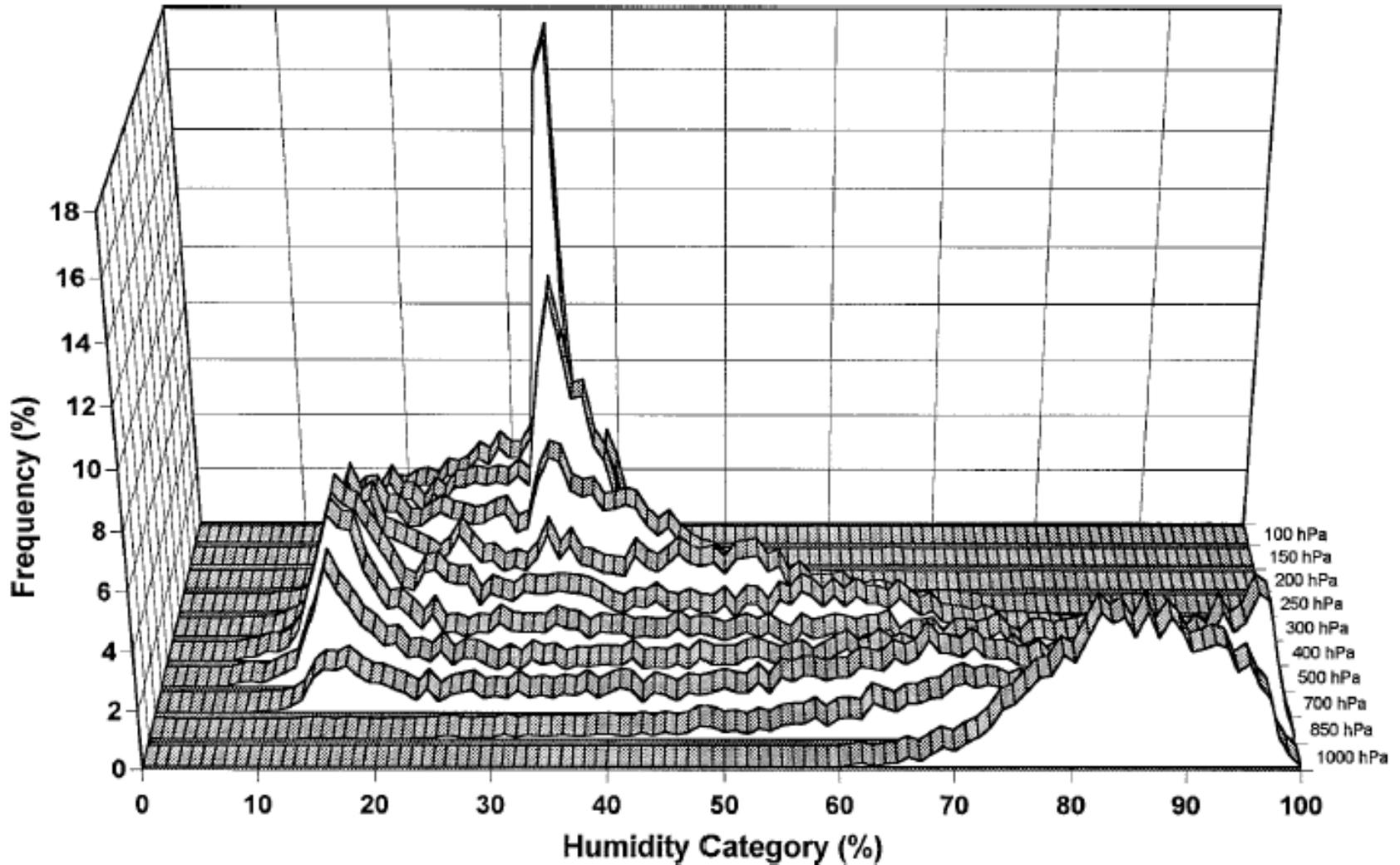
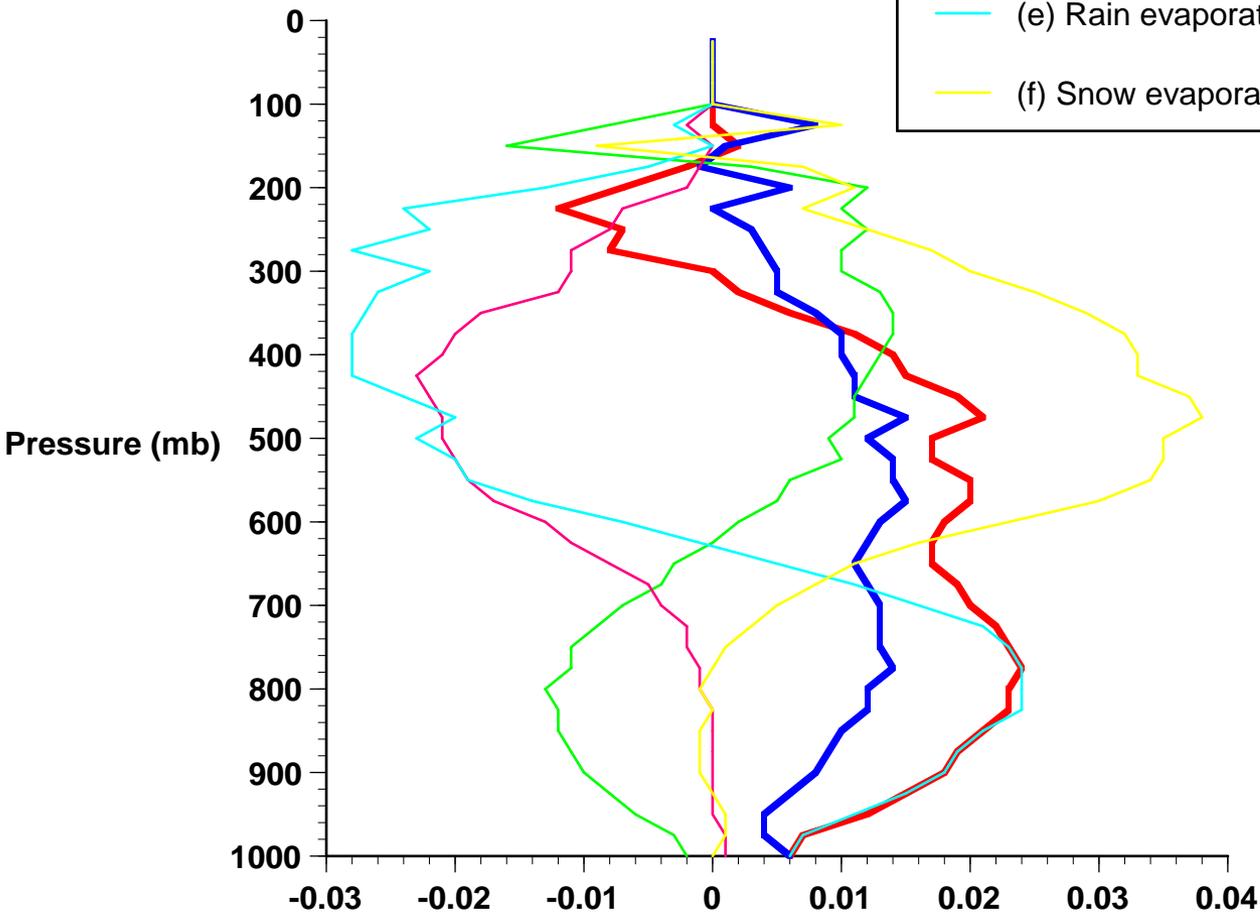


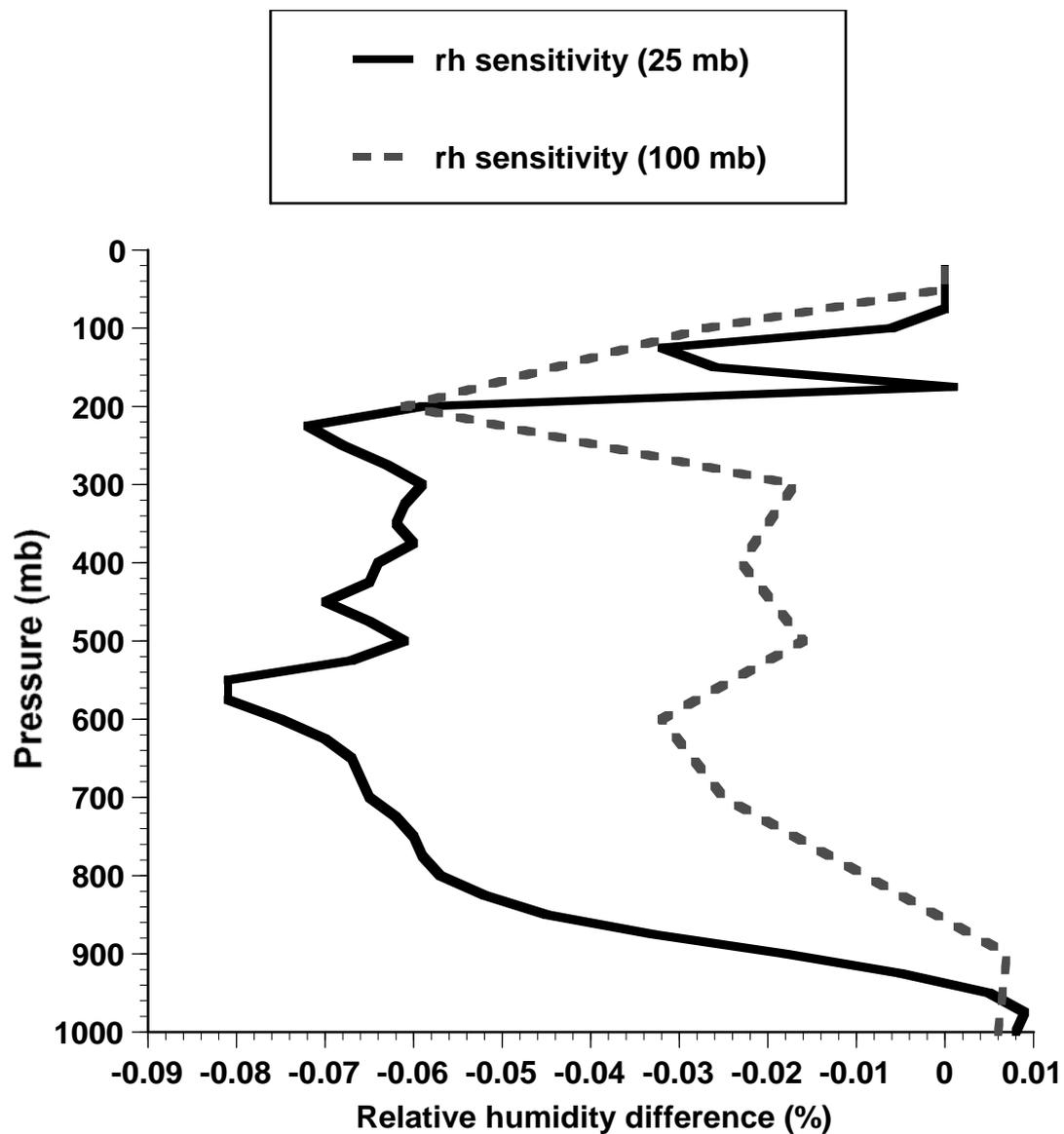
Image courtesy of AMS.

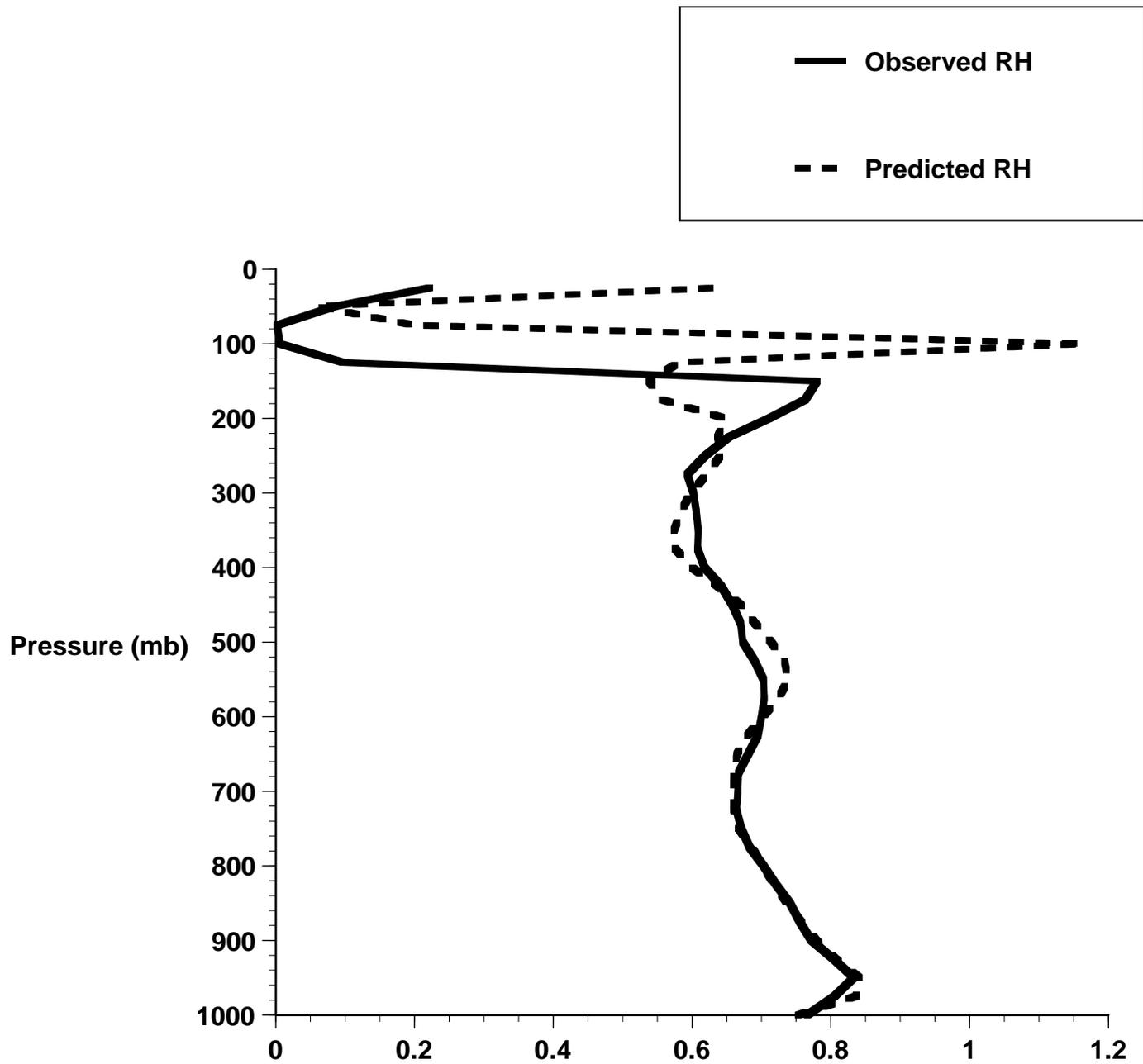
Sensitivity of relative humidity to assumptions about cloud microphysical processes

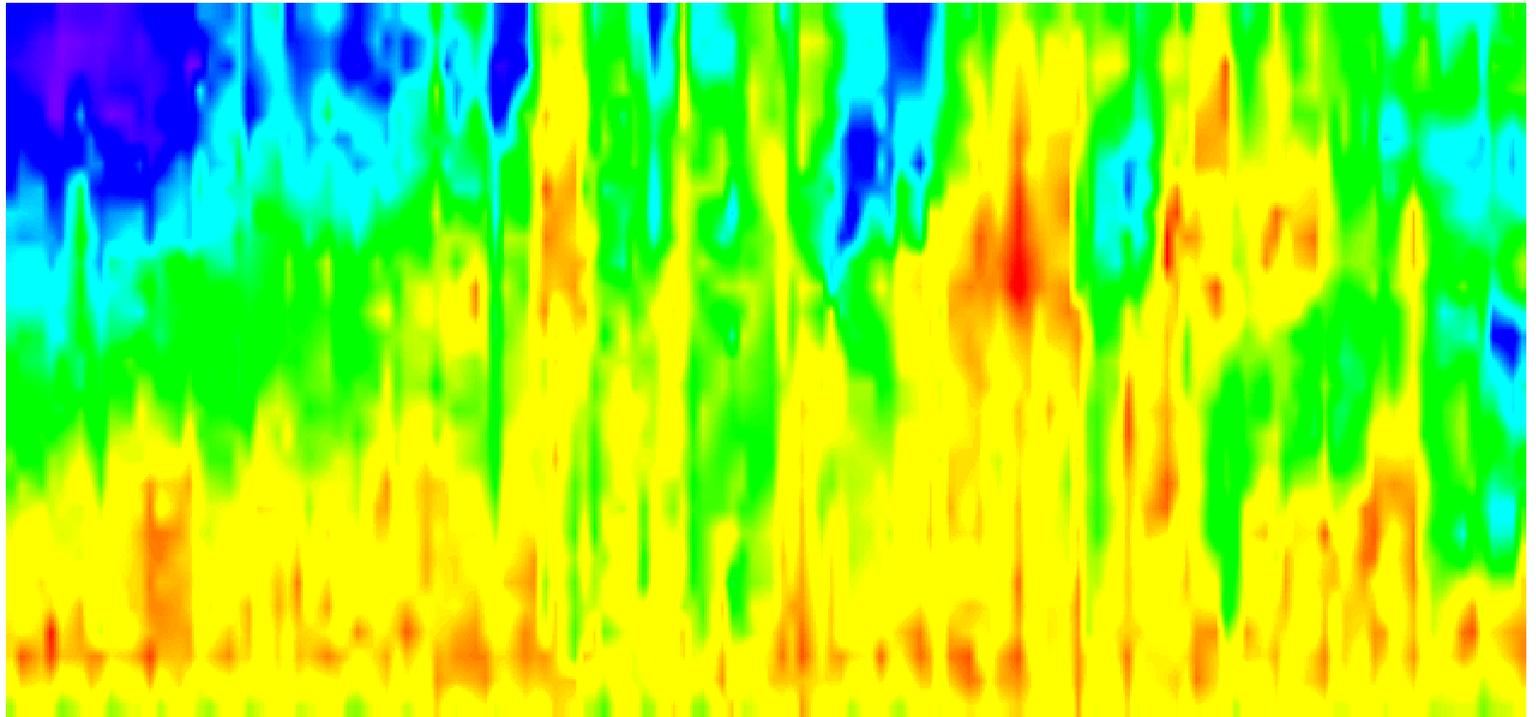
- (a) Sigma_s
- (b) Sigma_d
- (c) Terminal velocity of rain
- (d) Terminal velocity of snow
- (e) Rain evaporation coefficient
- (f) Snow evaporation coefficient

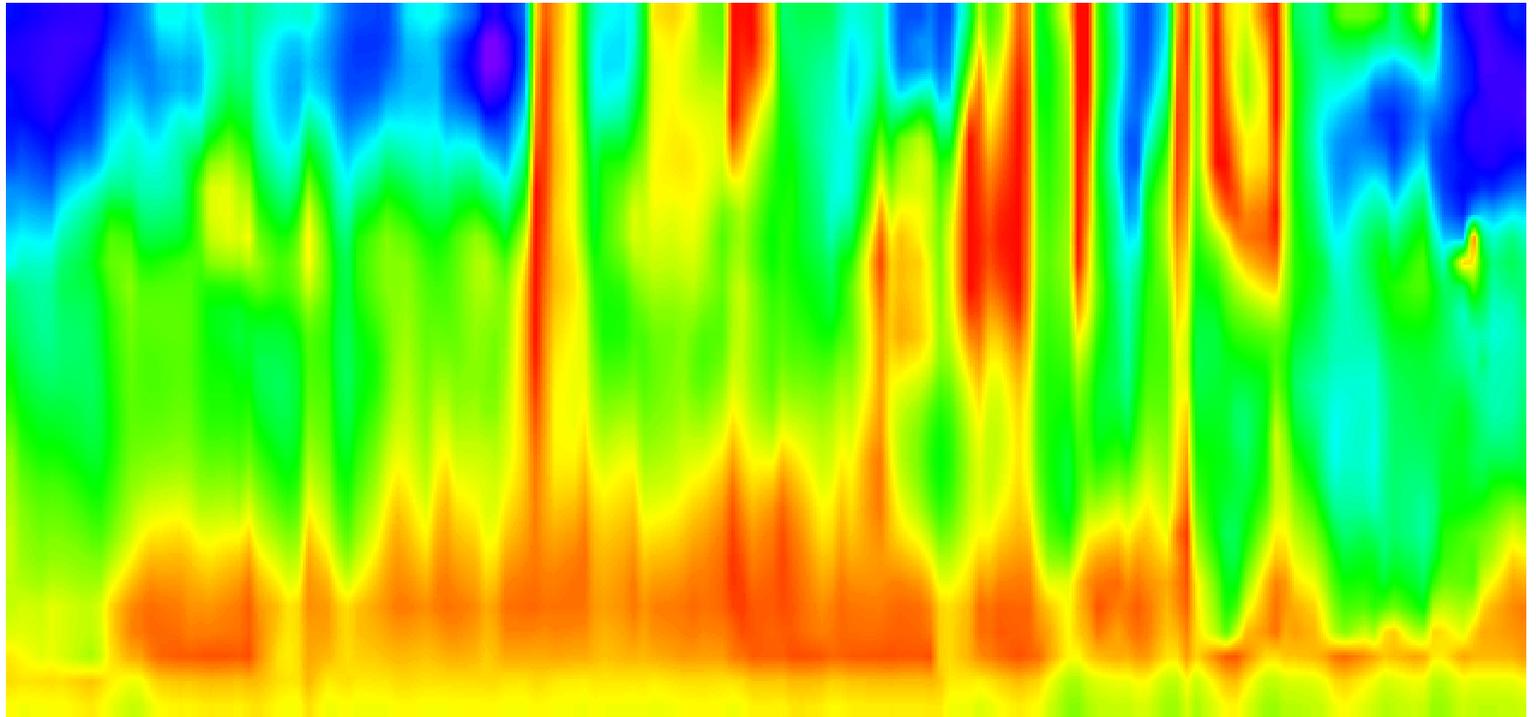


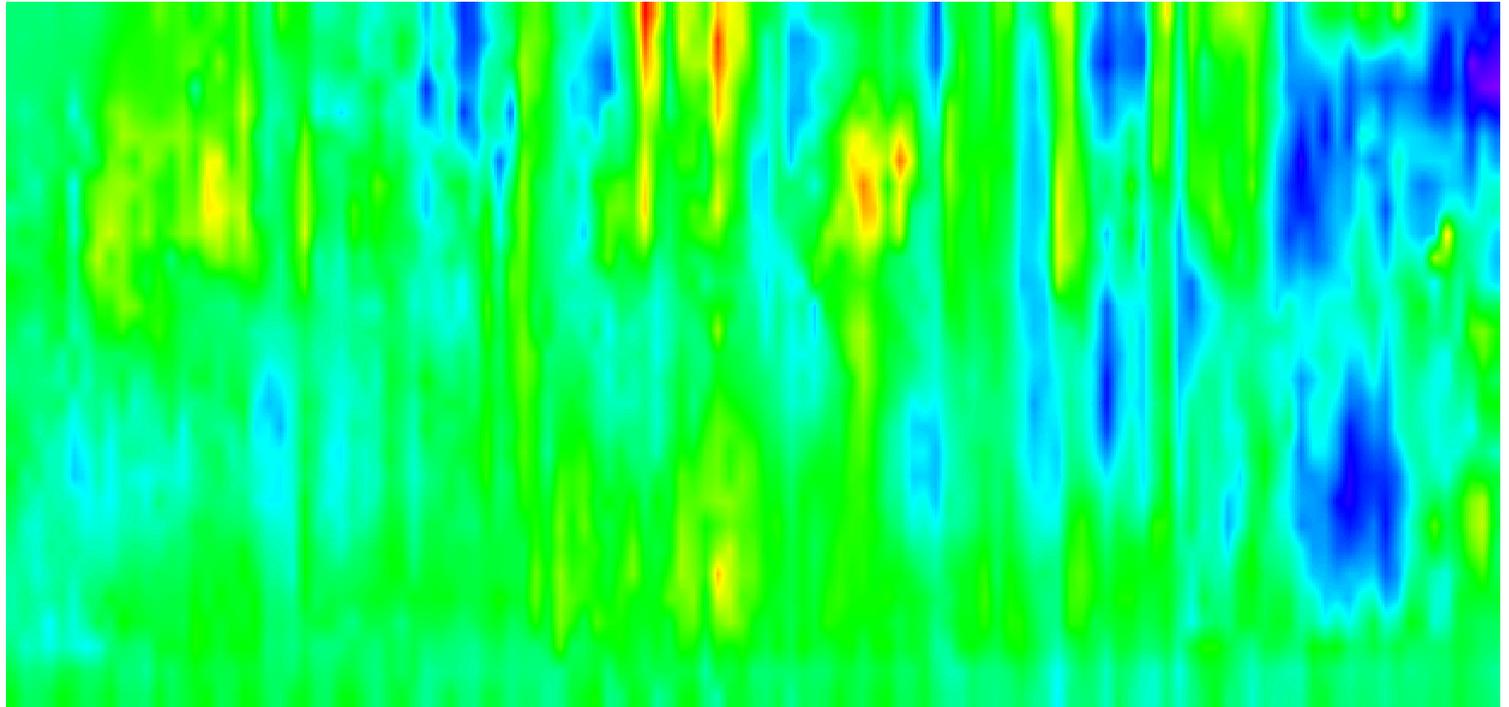
Sensitivity to microphysics increases with vertical resolution of model

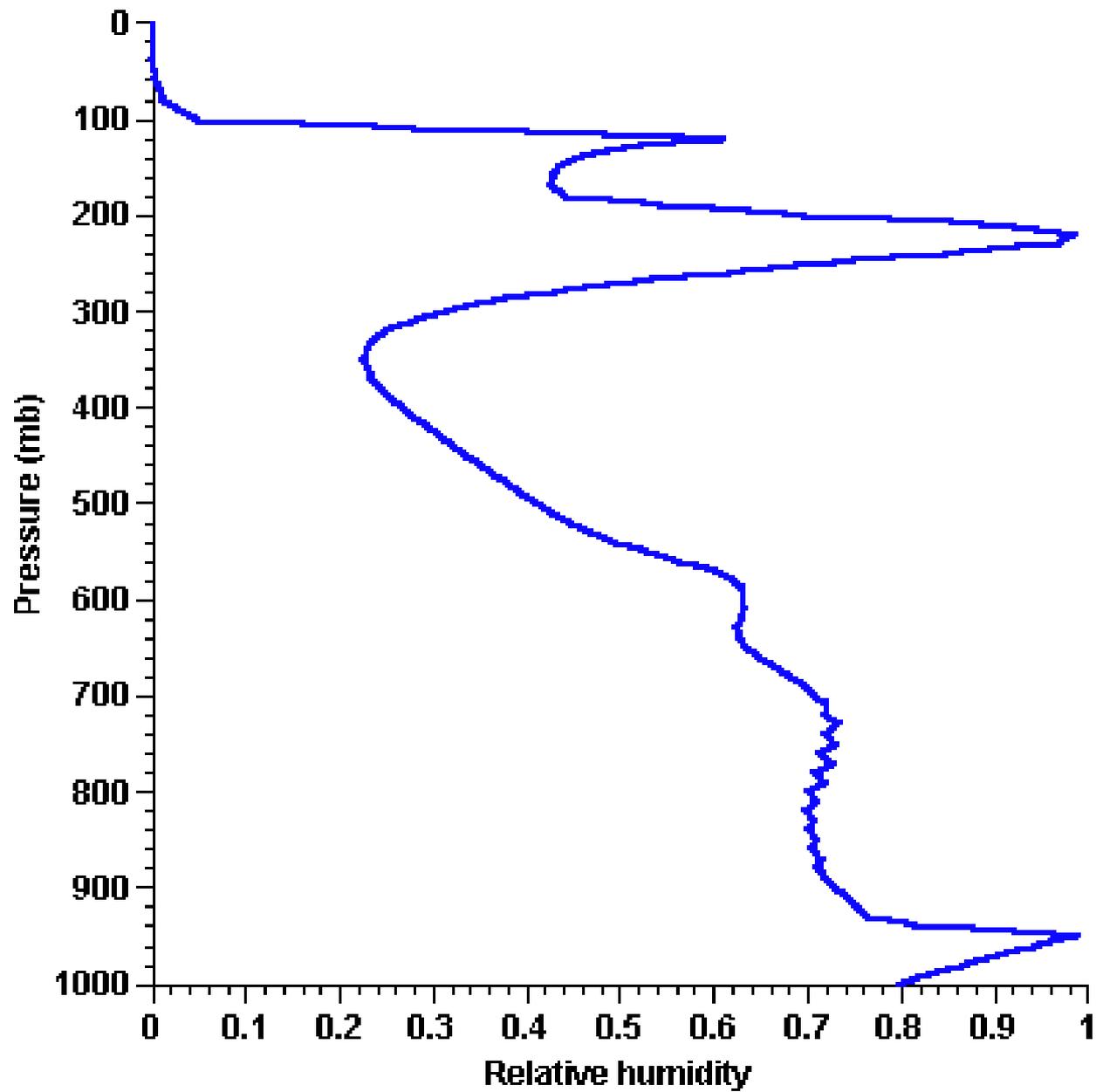


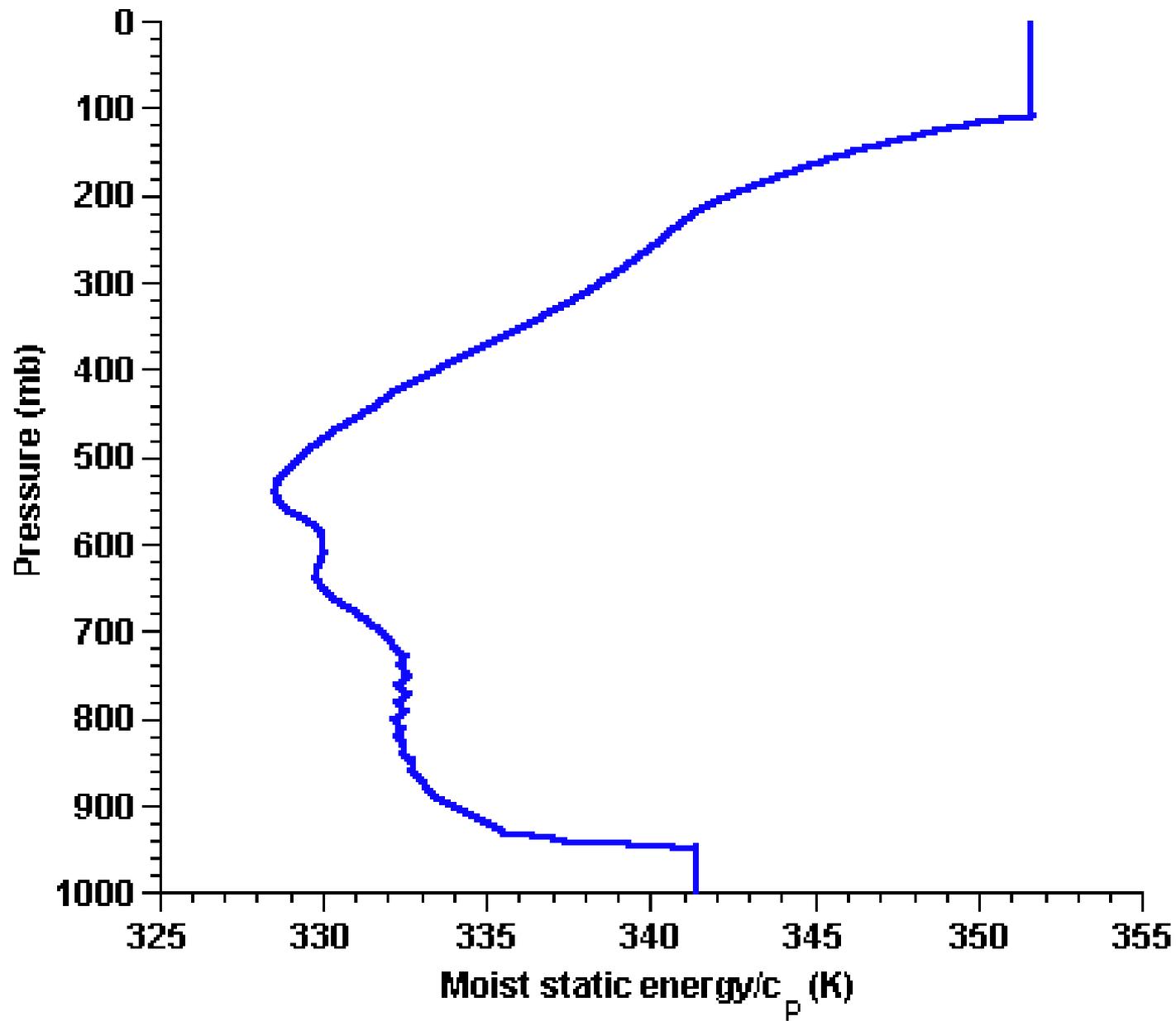


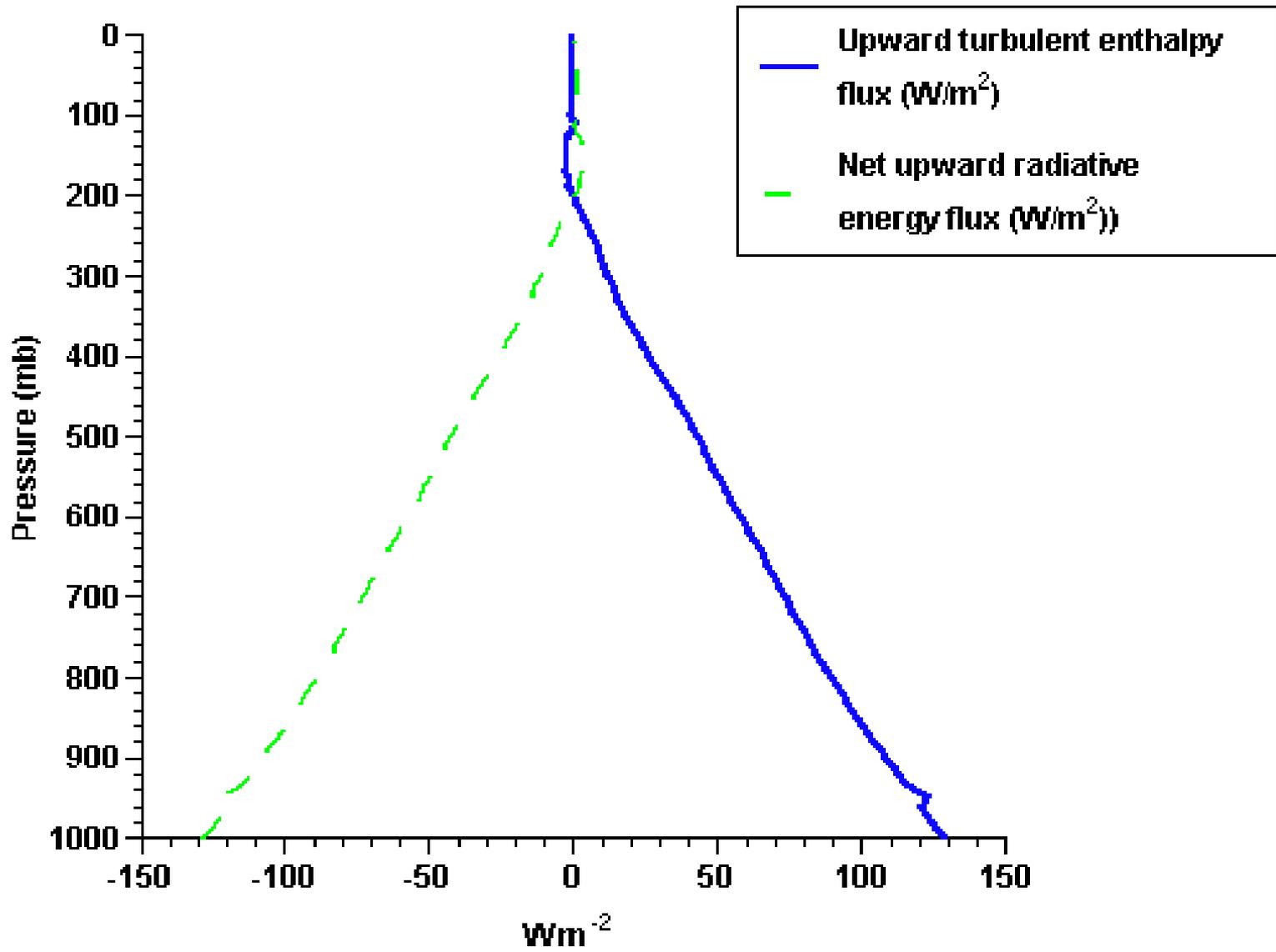












Effects of Clouds on Radiative Transfer

- Responsible for much of Earth's albedo
- Important greenhouse effect from longwave absorption and re-emission

Figures removed due to copyright restrictions.

See Figures 3.13, 3.14, 3.15, etc. in Hartmann Dennis L. *Global Physical Climatology*. Reading, MA: Academic Press, p. 411. ISBN: 0123285305.