

Substellar Atmospheres IV. Weather at the L/T Transition

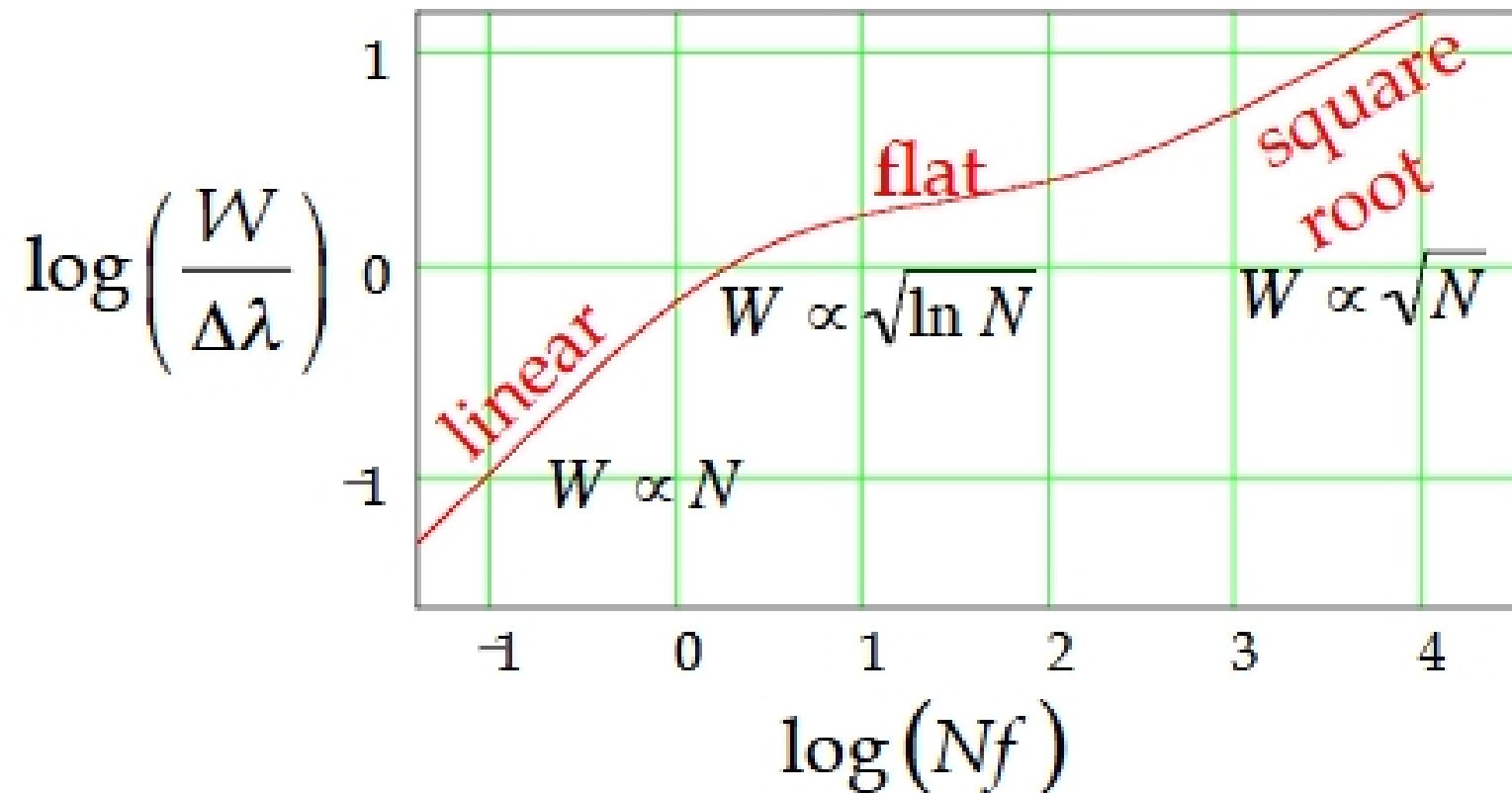
PHY 688, Lecture 21

Mar 16, 2009

Outline

- Course administration
 - oral presentation sign-up: April 27– May 8
 - problem set 3 now on-line; due Monday, Mar 23
 - seminar by Adam Burrows: Wed 1pm in ESS 450
- Discussion of problem set 2
 - problem 1: curve of growth
 - problem 3: extrasolar planet
 - problem 4: open and globular cluster metallicities
- Review of previous lecture
 - clouds levels and emergent flux from L and T atmospheres
 - current astrophysics problem: rapidity of cloud disappearance at the L/T transition
- Modeling the L/T transition: weather
 - possible scenarios
 - observational constraints
 - relevance to extrasolar planets

Problem 1: Curve of Growth



- in our case: $a = \gamma / (2 \Delta\lambda)$
 - i.e. Lorentzian / Doppler width
- flat part of c.o.g. seems missing for large a