



STOCKHOLMS UNIVERSITET

Meteorologiska Institutionen

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Master course in Geophysical Fluid Dynamics, MO7006, 7.5 hp, autumn 2011

Literature

- Vallis, G.K., *Atmospheric and Oceanic Fluid Dynamics*. Cambridge University Press, 2006.
Ch. 3.1-3.3, 3.6-3.8, 4.6, 5.1, 5.3, 5.6, 5.7, 6.1-6.3, 7.6, 7.7
- Lecture notes on equatorial waves

Lecture plan (preliminary)

29/8	introduction, derivation of SWE: 3.1
30/8	2-layer model, PV-conservation: 3.2, 3.3, 4.6, 3.6.1
1/9	Poincaré waves, Kelvin waves: 3.7
2/9	geostrophic adjustment, 3.8 (or Holton 7.6)
5/9	quasigeostrophy (scaling and equations): 5.1.1, 5.3.1
6/9	quizz (1h), then Rossby waves: 5.7
8/9	2-layer quasigeostrophy: 5.3.2, 5.7.2
9/9	equatorial waves: lecture notes
12/9	equatorial waves (continued)
13/9	conservation laws: 3.6.2, 5.6
15/9	instabilities, stability criteria: 6.1-6.3
16/9	invariants and stability criteria: 7.6-7.7
19/9	invariants and stability criteria (continued)
22/9	repetition

Grading

The grades are set according to the results of the final exam. The maximum score on the final exam is 50 points. The grading scale is A (45-50p), B (40-44p), C (33-39p), D (28-32p), E (25-27p), Fx (23-24p), F (0-22p). Passing the course requires at least grade E, and approved accounts of the laboratory exercise (PL) and the computer exercise (MJ).