

GEOF352 – Literature

The course will revolve around theoretical topics focusing on quasigeostrophy, baroclinic instability, Rossby wave propagation and other relevant topics.

The material from will be collected from scientific publications and the following book:

Atmospheric and Oceanic Fluid Dynamics Fundamentals and Large-scale Circulation

Author: Geoffrey K. Vallis

Date Published: June 2017

ISBN: 9781107065505

Supplementary reading might be found in these books:

Geophysical Fluid Dynamics

Author: Joseph Pedlosky

ISBN 978-1-4612-4650-3

Atmosphere-Ocean Dynamics, 1st Edition

Author: Adrian Gill

Release Date: 13 Dec 1982

Imprint: Academic Press

Print Book ISBN : 9780122835223

From Vallis book, I expect you know:

Chapter 1: Equations of Motion (entire Chapter)

Chapter 2: Effects of Rotation and Stratification (2.1-2.4, 2.6-2.10, 2.12)

Chapter 3: Shallow Water Systems and Isentropic Coordinates (3.1-3.2, 3.6-3.7, 3.10)

Chapter 4: Vorticity and Potential Vorticity (4.1-4.5)

Chapter 5: Simplified Equations for Ocean and Atmosphere (5.1, 5.4, 5.7)

Chapter 6: Barotropic and Baroclinic Instability (6.4, 6.6)

We will cover:

Chapter 3: Shallow Water Systems and Isentropic Coordinates (3.3-3.5, 3.8-3.9)

Chapter 4: Vorticity and Potential Vorticity (4.7)

Chapter 5: Simplified Equations for Ocean and Atmosphere (entire Chapter)

Chapter 6: Barotropic and Baroclinic Instability (entire Chapter)

Chapter 7: Wave-Mean Flow Interaction (7.1-7.5)

Chapter 13: Planetary Waves and the Stratosphere (13.1-13.3)

Chapter 12: Zonally Averaged Mid-Latitude Atmospheric Circulation (12.1-...)