An Australia Wide Geophysical Fluid Dynamics Seminar Series

April 16, 2010

1 Introduction and Goals of the Seminar Series

1.1 What is Geophysical Fluid Dynamics?

In chapter 1 of his book Geophysical Fluid Dynamics, Joseph Pedlosky says that “Geophysical fluid dynamics is the subject whose concerns are the fundamental dynamical concepts essential to an understanding of the atmosphere and the oceans. In principle, though, geophysical fluid dynamics deals with all naturally occurring fluid motions...” Within the present document, we take a fairly broad view of what is included within the field of geophysical fluid dynamics (GFD), however, it is acknowledged that there is a bias towards atmospheric and oceanic applications.

1.2 The Australian Context

The Australian context for the GFD community is quite different to that of most other comparable GFD communities. Firstly, the GFD community in Australia is relatively small and dispersed over a very large area. Secondly, Australian graduate research students are generally not required to take any courses during their postgraduate studies.

The combination of these factors means that many Australian postgraduate students have relatively limited exposure to topics outside of their specific field and/or the institution that they conduct their studies within. As such, the primary aim of the lecture series is to

- discuss fundamental concepts in GFD, as well as more advanced topics that are relevant to research currently being conducted in Australia (exactly how this should be achieved is discussed in section 2),

- expose postgraduate students and postdoctoral fellows in Australia to topics in GFD outside what they would necessarily be exposed to in their own field of research or their home institution(s).
1.3 Target Audience

While the series is aimed primarily at postgraduate students and postdoctoral fellows, it is intended to be open to all who are interested in GFD. Lecturers and professors are encouraged to attend and participate in discussions around the topic being discussed as their input may assist in others understanding (and who knows, they may learn something themselves).

Given the recent availability of advanced teleconference facilities at many research institutions, it is intended to use these facilities for the benefit of GFD students and the Australian GFD community at large.

2 The Structure of Seminars

Given the broad aims of the series discussed in section 1, we now set out a structure as to how to achieve those goals.

2.1 Frequency of Seminars

The seminars should be held regularly (once a month, or once every two weeks). Initially, in order to keep the organisational burden to a minimum, the series should be held monthly. The timing of the seminars should be semi-regular (e.g., the organisers should aim for, say, the seminar to occur in first full week of the month with the specific time to be decided upon by consensus between the speaker and the various locations).

2.2 Seminar Speakers

Speakers should either volunteer, or may be approached by organisers to speak to a particular topic. It is desirable for the location of the speakers to change regularly.

2.3 Preparation for Seminars

A background reading list should be distributed to the GFD lecture series list at least two weeks prior to the lecture. The reading list should predominantly consist of items that are pedagogical in nature, such as book chapters and review papers. The reading list should be a manageable length, such that all items on the reading list can realistically be read in the lead up to the seminar.
2.4 Seminar Content

The seminar itself should be approximately 45 minutes in length. The content of the seminar need not be purely pedagogical. Presenters are, in fact, encouraged to present results of recent research. The format of the seminar should be similar to that of a normal 30-50 minute seminar, except that the person giving the seminar should spend more time on fundamentals and motivation than what they would normally spend if it were a seminar given to their peers. The results from the reading list should be re-stated, but, it should be assumed that all attending have completed the reading and it is not necessary to dwell on how those results may have been achieved. The additional time should be spent expanding on the fundamentals (where necessary) and contextualising the research/topic presented, before proceeding to presenting and discussing any results.

2.5 Seminar Structure

In terms of the practicality of having the seminar presented in a number of locations, it is strongly recommended that a reading group in each location is set up prior to the seminar to discuss the background material presented in the reading list. Due to the intention that this aspect of the series be an interactive discussion, it is intended that each location does this independently, or if numbers are small, link up with one or two other locations that have small numbers.

The actual seminar will be hosted by one location (the location of the speaker). It is suggested that the person giving the presentation have slides, and that as a minimum, the slides and video/audio of the speaker be broadcast to the other locations. After the seminar is complete, there should be a question and answer session. Each location should be given the opportunity to ask two questions in turn, with a designated person at each location controlling who asks the questions at their own location. Once all locations have been given the opportunity to ask their two questions, the locations should be cycled through again (with two questions at a time) until time expires or there are no further questions from any locations.