

## PREFACE

The subject of “**Bounds on Turbulent Transport**” was introduced in a series of ten lectures. The six lecturers constitute almost all of the contributors to this subject. The subject was introduced and foundations were laid by five lectures by F. H. Busse. In the middle of the first week, L Howard reviewed his historical first approach to this subject and described more recent advances. Additional lectures by P Constantine, R. Kerswell, C. Caulfield and C. Doering provided modern advances. We trust that the lecture notes will constitute a timely review of this promising subject.

The following weeks had many highlights with approximately 40 additional lectures. The mini symposium on rotating convection in early July included presentations of experimental, ocean, atmospheric, and planetary observations. During the rest of the program, participants and visitors who have studied turbulence, convection, and instability in numerous geophysical situations with application to the ocean, the earth’s atmosphere and planetary circulation made numerous contributions.

I want to thank a number of participants. This year's fellows presented ten excellent lectures on their research projects. They clearly enjoyed—and contributed to—a fine and stimulating summer. George Veronis must be thanked for his enthusiastic coaching and to other contributions to this GFD program. Ed. Spiegel worked the porch in his usual pedagogic fashion. Eric Chassignet and Glenn Flierl spent many selfless hours with the computers. Jean-Luc Thiffeault, Claudia Pasquero and Jeanne Fleming made important contributions to creating this year's volume. And above all, Janet Fields provided her usual fine hospitality to the visitors and staff, and assisted with many aspects of running a smooth program both during the summer and throughout the year.

Finally, I want to especially thank W.V.R. Malkus, who unselfishly urged boundless bounding efforts throughout the decades. Though seated during his address, he prodded us to raise our sights still higher.

Thank you all,

Jack Whitehead, Director ‘02