

Contents

	<i>page</i>
<i>Contributors</i>	vii
<i>Preface</i>	ix
I Setting the scene	1
1 An introduction to the solar tachocline <i>Douglas Gough</i>	3
2 Reflections on the solar tachocline <i>Edward A. Spiegel</i>	31
II Observations	51
3 Observational results and issues concerning the tachocline <i>Jørgen Christensen-Dalsgaard & Michael J. Thompson</i>	53
III Hydrodynamic models	87
4 Hydrodynamic models of the tachocline <i>Jean-Paul Zahn</i>	89
5 Turbulence in the tachocline <i>Mark S. Miesch</i>	109
6 Mean field modelling of differential rotation <i>Günther Rüdiger & Leonid L. Kitchatinov</i>	129
IV Hydromagnetic properties	145
7 Magnetic confinement of the solar tachocline <i>Pascale Garaud</i>	147
8 Magnetic confinement and the sharp tachopause <i>Michael E. McIntyre</i>	183

9	β -Plane MHD turbulence and dissipation in the solar tachocline <i>Patrick H. Diamond, Sanae-I. Itoh, Kimitaka Itoh & Lara J. Silvers</i>	213
V	Instabilities	241
10	Global MHD instabilities of the tachocline <i>Peter A. Gilman & Paul S. Cally</i>	243
11	Magnetic buoyancy instabilities in the tachocline <i>David W. Hughes</i>	275
12	Instabilities, angular momentum transport and magnetohydrodynamic turbulence <i>Gordon I. Ogilvie</i>	299
VI	Dynamo action	317
13	The solar dynamo and the tachocline <i>Steven Tobias & Nigel Weiss</i>	319
VII	Overview	351
14	On studying the rotating solar interior <i>Robert Rosner</i>	353
	<i>Index</i>	369