THE NATURE AND THEORY OF THE GENERAL CIRCULATION OF THE ATMOSPHERE

3

BY

EDWARD N. LORENZ

WORLD METEOROLOGICAL ORGANIZATION

DK 551.513,1 DEI 1

THE NATURE AND THEORY OF THE GENERAL CIRCULATION OF THE ATMOSPHERE

BY

EDWARD N. LORENZ

WORLD METEOROLOGICAL ORGANIZATION 1967

TABLE OF CONTENTS

		Page
Forew	vord	v
Sumn	nary (English, French, Russian, Spanish)	VII
Introd	luction	XIII
I.	The problem.	1
II. III.	The dynamic equations	10 10 16 19 21 23 25 25 28 30
	Resolution of the circulation	30 32 45
IV.	The processes which maintain the circulation	48 48 59 78 90 93
V.	The energetics of the atmosphere	97 97 102 107
VI.	Laboratory models of the atmosphere	114 115 119 120
VII.	Numerical simulation of the atmosphere	127 127 130 133

U.

TABLE OF CONTENTS

																	Page
VIII.	Theoretical investigations																135
	Analytic solutions of the dynamic equations						 •			•			•				135
	The perturbation equations																138
	The equations for the basic flow	•	-	•	·	•		·				·	÷	·	•	•	142
IX.	The remaining problems		•		•	•		•		·	•					•	145
Refer	ences								•		•		·	·	•	•	152
List o	f symbols																159

IV