

Contents

Foreword	v
Editorial Staffs and Authors	ix
Prologue	1
Part I How to Survive a Tsunami	7
1. Examples of Tsunamis and Tsunami Disasters	9
1.1 Case Studies of Actual Tsunami Disasters	9
1.2 Indian Ocean Tsunami Disaster	13
1.3 Hokkaido Nansei-oki Earthquake Tsunami Disaster (Japan, 1993)	56
1.4 Case Study — What Separated Life and Death?	65
1.5 Damage to Buildings	76
1.6 Damage by Ships and Other Floating Objects	88
2. Knowledge for Tsunami Survival	101
2.1 Tsunamis and the Coast	101
2.2 Tsunami Currents and the Danger to Humans	120
2.3 How Houses are Washed Away	133
2.4 Effect of Natural Objects	150
2.5 Effect of Artificial Structures	158
3. Prevention and Mitigation of Tsunami Disasters	177
3.1 Viewpoint of Disaster Prevention (Preparedness)	177
3.2 Countermeasures by Hardware	188
3.3 Countermeasures by Software	200
3.4 Transmission of Experience and Education	211
3.5 Regional Efforts to Implement Comprehensive Tsunami Countermeasures	225

Part II Tsunami Behavior and Forecasting	241
4. Occurrence and Amplification of Tsunamis	243
4.1 Mechanism of Tsunami Occurrence	243
4.2 Amplification and Attenuation of Tsunamis at Coast	250
4.3 Tsunami Run-up and Wave Force	260
5. Tsunami Simulations and Forecasting Systems	281
5.1 Tsunami Simulations	281
5.2 Tsunami Forecasting Systems and Their Evolution	284
5.3 Future of Tsunami Forecasting Systems	293
Epilogue	297
Index	299