

TABLE OF CONTENTS

EDITORIAL PREFACE	v
TRANSLATOR'S REMARKS	ix
PREFACE	xi
1. INTRODUCTION	1
2. MEASUREMENT	14
2.1. The Explication of the Concept of Measurement	14
2.2. The Definition of the Concept of Measurement	20
2.3. The Subject Matter, Function and Scope of Measurement	28
3. MAGNITUDES	35
3.1. Quantities, Magnitudes, Numbers: A Historical Excursion	37
3.2. Quantities and Magnitudes	42
3.3. The Object of Measurement	46
3.4. Measurement Units, Naming and Dimension	55
3.5. The Classification of Magnitudes	73
4. SCALES	83
4.1. The Concept of a Scale	83
4.2. The Origin of a Scale	87
4.3. Distance	91
5. QUANTIFICATION	101
5.1. Scaling	101
5.2. Counting	105
6. THEORY OF MEASUREMENT	112
6.1. Representation Theories of Measurement	113
6.2. Kinds of Measurement	115
6.3. Metrization	133
6.4. The Representation Theorem	150

7. THEORY OF SCALES	158
7.1. The Classification of Scale Types	158
7.2. Scale Transformations and the Uniqueness Theorem	168
8. METHODOLOGICAL PROBLEMS OF MEASUREMENT	178
8.1. Axiomatization of the Systems of Measurement	178
8.2. Empirical Relations and Operations	184
8.3. The Precision of Measurement	192
8.4. Meaningfulness, Validity and Reliability	199
9. PHILOSOPHICAL PROBLEMS OF MEASUREMENT	205
9.1. Materialist Foundations of Measurement	205
9.2. The Possibilities and Limits of Measurement	214
NOTES	218
BIBLIOGRAPHY	226
INDEX OF PERSONAL NAMES	234
INDEX OF SUBJECTS	237