

# Contents

## 1. Principles of Measurement

Software Measurement: Why a Formal Approach?  
(Invited Paper)

*N. Fenton* ..... 3

Never Mind the Metrics What About the Numbers!  
(Invited Paper)

*B. Kitchenham* ..... 28

Moving from Philosophy to Practice in Software Measurement  
*J.M. Bieman, N. Fenton, D.A. Gustafson, A. Melton*

*and R. Whitty* ..... 38

## 2. Formal Measurement in Practice

Deriving Measures of Software Reuse in Object Oriented  
Systems (Invited Paper)

*J.M. Bieman* ..... 63

Language Independent Definition of Axiomatic Metrics

*N. Fuchs and S. Stainer* ..... 84

Complexity Measures on Trees

*M.D. Rice* ..... 108

Multi-dimensional Software Metrics

*R. Whitty* ..... 116

## 3. Measurement Validation/Verification

A Critique of Validation/Verification Techniques for Software  
Development Measures

*D.A. Gustafson, R.M. Toledo, R.E. Courtney*  
*and N. Temsamani* ..... 145

Algebraic Models and Metric Validation (Invited Paper)

*M. Shepperd* ..... 157

## 4. Foundations

Properties of Software Measures (Invited Paper) <i>D.A. Gustafson and B. Prasad</i> .....	179
Specifying Internal, External, and Predictive Software Metrics (Invited Paper) <i>A. Melton</i> .....	194
The Mathematics of Measurement in Software Engineering <i>M. Russell</i> .....	209
Measurement Theory and Software Measures (Invited Paper) <i>H. Zuse and P. Bollmann-Sdorra</i> .....	219
Author Index .....	261