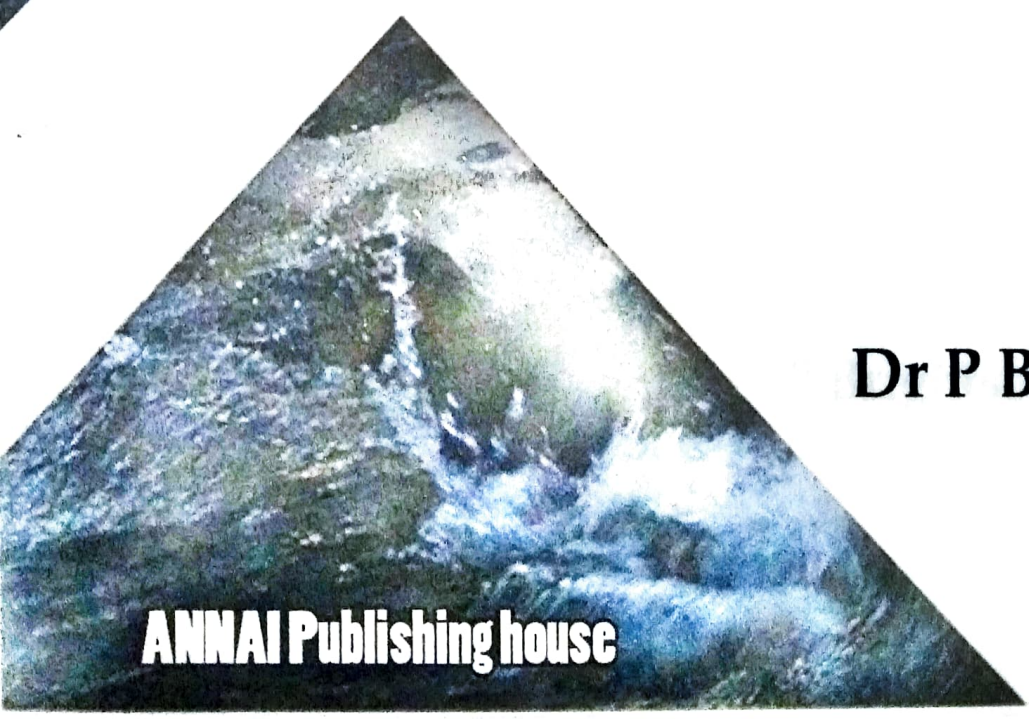


Application of Hydraulic Engineering



Dr P Brightson

ANNAI Publishing house

Contents

PREFACE	vii
1 BASIC CONCEPTS	1
1-1 Introduction	2
1-2 Definitions	2
1-3 Classification of Flows	4
Steady and Unsteady Flows	5
Uniform and Nonuniform flows	7
Laminar and Turbulent Flows	7
Subcritical, Supercritical, and Critical Flows	8
1-4 Terminology	8
1-5 Velocity Distribution	9
Energy Coefficient	11
Momentum Coefficient	13
Example 1-1	15
1-6 Pressure Distribution	16
Static Conditions	16
Horizontal, Parallel Flow	16
Parallel Flow in Sloping Channels	17
Curvilinear Flow	18
1-7 Reynolds Transport Theorem	20
1-8 Computer Program	21
1-9 Summary	21
References	26
2 CONSERVATION LAWS	27
2-1 Introduction	28
2-2 Conservation of Mass	28
2-3 Conservation of Momentum	29
2-4 Equation of Motion	31
Steady Flow	33

BASIC CONCEPTS



Satellite image of Tarbela Dam on the Indus River in Pakistan
(Courtesy, Johnson Space Center, NASA)