

ISO 6421:2012-08 (E)

Hydrometry - Methods for assessment of reservoir sedimentation

Contents		Page
Foreword		iv
Introduction		v
1	Scope	1
2	Normative references	1
3	Terms and definitions	1
4	General	1
4.1	Origin of the sediment deposited in the reservoir	1
4.2	Overview of reservoir-sedimentation assessment methods	1
5	Sediment transport balance	2
6	Topographic survey methods	3
6.1	General	3
6.2	Reservoir sedimentation surveys	3
6.3	Frequency	4
6.4	Survey equipment	4
6.5	Density measurements and sediment samplers	7
7	Topographic survey using the contour method	8
7.1	General	8
7.2	Hydrographic survey	9
7.3	Topographic surveys	9
7.4	Computation of reservoir capacity	10
8	Topographic survey using a cross-sectional (range line) method	10
8.1	General	10
8.2	Reference frames/graphs	11
8.3	Calculation of reservoir capacity	15
9	Sub-bottom mapping	19
10	Remote-sensing methods	20
10.1	General	20
10.2	Advantages	20
10.3	Limitations	20
11	Light detection and ranging	20
11.1	General	20
11.2	Aerial applications of LiDAR	21
11.3	Ground-based applications of LiDAR	21
12	Aerial imagery methods	22
12.1	General	22
12.2	Photogrammetry methods	22
12.3	Satellite imagery methods	23
13	Uncertainty analysis	23

13.1	General	23
13.2	Principles	23
13.3	Estimation of uncertainty	24
Annex A (informative) Optimization of the arrangement of ranges		28
Annex B (informative) Introduction to measurement uncertainty		32
Bibliography		40