Contents

INT	RODUCTION	1
	Chapter 1. Elliptic Space	
1.	Four-dimensional vector space	3
2.	Concept of an elliptic space	6
3.	Curves in the ellipti cspace	9
4.	Surfaces in the elliptic space	13
5.	Fundamental equations of the theory of surfaces in an	
	elliptic space	16
	Chapter 2. Convex Bodies and Convex Surfaces in an	
	Elliptic Space	
1.	Concept of a convex body	19
2.	Convex surfaces in an elliptic space	21
3.	On the deviation of the shortest line on a convex surface	
٥.	from its semi-tangent at the initial point	24
4.	Manifolds of curvature not less than K . The theorems of	
7.	A. D. Alexandrov	26
	Chapter 3. Transformation of Congruent Figures	
1.	Transformation of congruent figures in an elliptic space	
	into congruent figures in a Euclidean space	31
2.	Transformation of congruent figures in the Euclidean space	
۷.	into congruent figures in the elliptic space	34
3.	Transformation of infinitesimal displacements	37
4.	Transformation of straight lines and planes	40
	Chapter 4. Isometric Surfaces	
	Transformation of isometric surfaces	44

viii

2.	Transformation of locally convex isometric surfaces in an
	elliptic space
3.	Proof of lemma 1
4.	Transformation of locally convex isometric surfaces in a
	Euclidean space
5.	Proof of lemma 2
	Chapter 5. Infinitesimal Deformations of Surfaces in an
	Elliptic Space
1.	Pairs of isometric surfaces and infinitesimal deformations 57
2.	Transformation of surfaces and their infinitesimal deforma-
2	tions
3.	
	in an elliptic space 62
	Chapter 6. Unique Determination of General Convex
	Surfaces in the Elliptic Space
1.	A lemma on the ridge points of a convex surface 65
2.	Transformation of isometric dihedral angles and cones
<u> </u>	Local convexity of surfaces Φ_1 and Φ_2 at the smooth points 70
4.	Convexity and isometry of the surfaces Φ_1 and Φ_2
5.	Various theorems on the unique determination of convex
	surfaces in the elliptic space
	Chapter 7. Regularity of Convex Surfaces with a
	Regular Metric
1.	Equation of deformation of surfaces in the elliptic space 79
2.	Evaluation of the normal curvature of a regular convex cap
	in the elliptic space
3.	Convex surfaces of a bounded specific curvature in the
	elliptic space ,
4.	Proof of the regularity of convex surfaces with a regular
	metric in the elliptic space
RE	FERENCES
	DEX