

Contents

1.	TIGHT IMMERSIONS	
0.	Introduction	1
1.	Review of critical point theory	6
2.	The Morse inequalities	7
3.	Minimal total absolute curvature immersions	9
4.	Convex sets	17
5.	Tight maps and immersions	22
6.	Products of tight immersions; taut immersions	43
7.	Tight surfaces	49
8.	The Chern-Lashof theorem	84
9.	Veronese manifolds	87
10.	Tight immersions of maximal codimension	98
2.	TAUT IMMERSIONS	
0.	Introduction	109
1.	Definitions and first results: examples	113
2.	Taut embeddings of spheres	125
3.	Shape operators of tubes	127
4.	A manifold structure for the focal set	132
5.	The classical cyclides of Dupin	151
6.	Dupin hypersurfaces	166
7.	Taut surfaces	190
8.	Higher dimensional taut hypersurfaces	197
9.	Totally focal embeddings	207
10.	Tight and taut immersions in hyperbolic space	233

3. ISOPARAMETRIC HYPERSURFACES

0. Introduction	237
1. Parallel hypersurfaces in the sphere	243
2. Focal submanifolds	247
3. Calculus of homogeneous functions	251
4. Isoparametric hypersurfaces as algebraic submanifolds	255
5. Geometry of level hypersurfaces	268
6. The global structure of an isoparametric family of hypersurfaces	280
7. Examples of isoparametric hypersurfaces	294
 REFERENCES	305
 SUMMARY OF NOTATION	325
 INDEX	329