UNIVERSIDAD DE CÁDIZ

FACULTAD DE CIENCIAS

GEOMETRIC INVARIANTS AND INNER STRUCTURE

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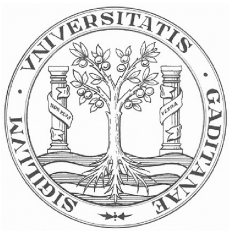

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Abstract

First thing, a summary of this dissertation in both English and Spanish will be presented.

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Notation

Next, we will proceed to explain the main notation followed in this dissertation:

B_X ..... the closed unit ball in X

U_X ..... the open unit ball in X

S_X ..... the unit sphere in X

$B_X(x,r)$ ..... the closed ball of center x and radius r in X

$U_X(x,r)$ ..... the open ball of center x and radius r in X

$S_X(x,r)$ ..... the sphere of center x and radius r in X

$\mathrm{int}(M)$ ..... the topological interior of M

$\mathrm{int}_A(M)$ ..... the topological interior of M relative to A

$\mathrm{cl}(M)$ ..... the topological closure of M

$\mathrm{cl}_A(M)$ ..... the topological closure of M relative to A

$\mathrm{bd}(M)$ ..... the topological boundary of M

$\mathrm{bd}_A(M)$ ..... the topological boundary of M relative to A

$\mathrm{ext}(M)$ ..... the set of extreme points F

X^* ..... the topological dual of X

X^{**} ..... the topological bidual of X

$F(f,A)$ ..... the supporting hyperplane relative to $f \in X^*$ in A

$F(f)$ ..... the supporting hyperplane relative to f in B_X

$\exp(B_X)$ ..... the set of exposed points of B_X

$E(f)$ ..... is the edge of the unit ball with respect to $f \in S_{X^*}$

$\mathrm{rot}(B_X)$ ..... the set of rotund points of B_X

$\mathrm{pexp}(B_X)$ ..... the set of proper exposed points of B_X

$\mathscr{C}_X$ ..... the set of facets of B_X

$\mathrm{st}(x,B_X)$ ..... the starlike set of center x

$\mathrm{smo}(B_X)$ ..... the set of the smooth points of B_X

$\mathscr{P}(\mathscr{X})$ ..... the power set of $\mathscr{X}$

ν ..... the spherical image map from S_X to S_{X^*}

$\mathrm{frm}(B_X)$ ..... the frame of the unit ball

$\mathrm{inn}(M)$ ..... the set of inner points of M

$\mathrm{span}(M)$ ..... the linear span of M

$\overline{\mathrm{span}}(M)$ ..... the closed linear span of M

$\mathrm{co}(M)$ ..... the convex hull of M

$\overline{\mathrm{co}}(M)$ ..... the closed convex hull of M

$\mathrm{inter}(M)$ ..... the set of the internal points of M

$\mathrm{adj}(M)$ ..... the set of the adjacent elements of M

$\mathrm{sadj}(M)$ ..... the set of the strongly adjacent elements of M

$\mathrm{suppv}(T)$ ..... the set of supporting vectors of the operator T

$\mathrm{suppv}_1(x^*)$ ..... the set of 1-supporting vectors of the functional x^*

nsupp(M) ..... the set of non-support points of M

μ_A ..... the Minkowski functional of A

MUp ..... the Mazur-Ulman property

Pp ..... the P-property or property P

Ip ..... the I-property or inner property

Fp ..... the F-property or flat property

APPENDIX

C

Appendix