

# **Dedication**

To my Family

## **Acknowledgements**

It is hard to name all those who played particular roles in the creation of this dissertation. However, I always keep in mind all these people with much respect and gratitude. First of all, I should thank God who helped me to fulfill my aspirations through providing me with the right people and the right opportunities. I am indebted to my supervisor, Prof. Shawgy Hussein AbdAlla, of Sudan university of sciences of technology who patiently offered me years of generous guidance, intellectual insights, strong support, and confidence especially during those tough times when I felt lost. I will always remember his encouraging words and emails when I was away from Sudan.

## Abstract

A Banach Space admits an equivalent strongly uniformly Gâteaux smooth norm if and only if it contains the dense range of a super weakly compact operator, which is equivalent to generated by a convex super weakly compact set. We show that relatively  $p$ -compact subsets of a Banach space of  $p$ -compact operator are collectively  $p$ -compact. We study the almost over complete and almost over total sequences in Banach spaces. We also study super projective Banach spaces. We show that they cannot contain copies of  $\ell_1$ , which restricts the search for non-reflexive examples of these spaces.

## الخلاصة

فضاء باناخ يمتلك تنظيم أملس جاتوكس منتظم قوي متكافئ إذا و فقط إذا كان يحتوي مدى كثيف لمؤثر متراص ضعيف أعلى و الذي هو يكافئ التوليد بواسطة الفئة المتراصة الضعيفة العليا المحدبة. أوضحنا أن الفئات الجزئية المتراصة  $p$ -النسبية لفضاء باناخ للمؤثر المتراص  $p$  - هو جماعي. درسنا المنتاليات التامة فوق التقريبية و الكلية فوق التقريبية في فضاءات باناخ. أيضاً درسنا فضاءات باناخ الإسقاطية الفوقية. أوضحنا أنه هي لا يمكن أن تحتوي نسخ إلى  $l_1$  والتي لها قصراً للبحث لأجل الأمثلة غير الإنعكاسية لهذه الفضاءات.

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