GELFAND COMPACTNESS

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ABSTRACT.

INTRODUCTION

In this paper the rings are associative but we do not ask them to have unit.

1. PRELIMINARIES

[2]

2. RINGS WITH LOCAL UNITS

Definition 2.1. *Let R be a ring. We say that R is a ring with local units, if for any finitely many $x_1, \dots, x_n \in R$ there is an idempotent $e \in R$ with $a_1, \dots, a_n \in eRe$.*

Definition 2.2. *Let R be a ring. We say that R has enough idempotents, if there exists a family $\{e_\lambda\}_{\lambda\in\Lambda}$ of pairwise orthogonal idempotents of elements in R with $R = \bigoplus_{\lambda\in\Lambda} Re_\lambda = \bigoplus_{\lambda\in\Lambda} e_\lambda R$. In this case $\{e_\lambda\}_{\lambda\in\Lambda}$ is called a complete family of idempotents in R.*

Definition 2.3. *Let R be a ring. We say that R is a s-unital ring, if for any finitely many $x_1, \dots, x_n \in R$ there is $y \in R$ with $x_i y = x_i = y x_i$ for $i = 1, \dots, n$.*

Definition 2.4. *Let R be a ring. We say that R is a firm ring, if the canonical morphism $\mu\colon R \otimes_R R \longrightarrow R$ given by $\mu(r \otimes s) = rs$ is an isomorphism.*

Definition 2.5. *Let R be a ring. We say that R is idempotent, if $R^2 = R$, that is, that for any $x \in R$ there are $x_1, \dots, x_n, y_1, \dots, y_n \in R$ such that $x = \sum_{i=1}^n x_i y_i$.*

3. PARACOMPACT SPACE

[1]

4. METACOMPACT SPACE

5. ORTHOCOMPACT SPACE

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