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On Some Types of Bitopological Groups with respect to ij - α - *Open Sets*

A thesis
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Abstract

The goal of this work is to study some types of bitopological groups with respect to ij - α - open sets . We state below some of the main results that are obtained in this work :

1. The inversion function I in a bitopological group of type (R) , where $R = 1,2,.....,8$ is ij - α - homeomorphism .

2. The inversion function I in a bitopological group of type (R) , where $R = 2,6,8$ is ij - α - irresolute - homeomorphism .

3. A nice bitopological group of type (R) , where $R = 1,2,.....,8$ is ij - α - homogeneous .

4. A nice bitopological group of type (R) , where $R = 2,4,5$ is ij - α - irresolute - homogeneous .

5. Let G be a nice bitopological group of type (4) . Then :

(i) H is an algebric subgroup of G implies ij - α - $\mathrm{cl}(H)$ is a subgroup of G

(ii) H is an algebric invariant subgroup of G implies ij - α - $\mathrm{cl}(H)$ is an invariant subgroup of G .

6. The ij - α - component of the identity in a nice bitopological group of type (4) is an invariant subgroup of G .

7. Let H be ij - α - dense algebric subgroup of a nice bitopological group G of type (4) and let K be an invariant algebric subgroup of H . Then ij - α - $\mathrm{cl}_G(K)$ is an invariant subgroup of G .

8. Let G be a bitopological group of type (1) and H be an invariant algebric subgroup of G . Let G/H be the quotient space of the first type and f be the canonical function from G into G/H . Then :

(i) f is onto

(ii) f is i - continuous

(iii) f is ij - α - irresolute

(iv) When G is a nice bitopological group of type (4), then f is ij - α - open

9. Let G be a nice bitopological group of type (4) and H be an invariant algebric subgroup of G then the quotient space of the first type G/H is an ij - α - irresolute - homogeneous .

10. Let G be a nice bitopological group of type (4) and H be an invariant algebric subgroup of G. Let G/H be the quotient space of the first type . Then G/H is discrete space iff H is ij - α - open in G.

11. Let G be a bitopological group of type (1) and H be an invariant algebric subgroup of G. Let G/H be the quotient space of the first type .
Then G is ij - α - compact implies G/H is ij - α - compact .

12. Let H be an invariant algebric subgroup of a bitopological group $(G,*)$ of type (1) and G/H be the quotient space of the first type . Then $(G/H,\theta)$ is a bitopological quotient group of type (1) .

(where θ is the usual operation on G/H) .

13. Let G be a bitopological group of type (1) and H is an invariant algebric subgroup of G. Then the canonical function f of the first type from G into G/H is a bitopological group homomorphism.

14. Let G be a nice bitopological group of type (4) . Let H and M are two invariant algebric subgroups of G such that $H \subseteq M$. And let G/M , G/H and $(G/H)/(M/H)$ be the quotient spaces of the first type . Then G/M is ij - α - irresolute - homeomorphic to $(G/H)/(M/H)$.