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NEUTROSOPHIC SUPRA $b^{*}g\alpha$- CLOSED SETS

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Abstract

This article introduces the concept of neutrosophic supra g-closed set, neutrosophic supra $^{*}g\alpha$- closedset, neutrosophicsupra $b^{*}g\alpha$- closed set and neutrosophic supra g-closed set in neutrosophic supra topological spaces and the properties of these sets are discussed. Also the notion of neutrosophic supra $^{*}g\alpha$- continuous function, neutrosophic supra $^{*}g\alpha$- continuous function, neutrosophic supra $b^{*}g\alpha$- continuous function and neutrosophic supra $b^{*}g\alpha$- continuous functions inneutrosophic supra topological spaces are introduced and discussed its properties.

1. Introduction

A set with a truth (degree of membership) value was named by a fuzzy set value and it was introduced by Zadeh [11] in 1965. Fuzzy set has its own real life applications to handle uncertainty. In addition to the fuzzy set values falsehood (degree of non-membership) values are taking place and commonly named as an intuitionistic fuzzy set value and it was introduced by Atanassov [2] in1986. Also intuitionistic fuzzy set deals with incomplete information data. Generalization of intuitionistic fuzzy set named as a neutrosophic set, in addition to truth values and falsehood values there will be a neutrality

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(degree of indeterminacy) values have taken place in the neutrosophic set. It was a part of neutrosophy which studies the origin and scope of neutralities in the neutrosophic field.

Smarandache [10] introduced the neutrosophic set in 1998. The author has also introduced the neutrosophic components T-truth membership function, I-indeterminacy membership function, F-non membership function respectively and all these three function values must be in the nonstandard and unit interval $]-0, 1^{+}[$. This concept of neutrosophic set was applied by Salama et al. [8] to introduced neutrosophic topological spaces in 2012. The author has also introduced a neutrosophic closed sets and its continuous functions in 2014. In 2017, Arokiarani et al. [1] introduced neutrosophic α-closed sets inneutrosophic topological spaces and in the same year, generalized neutrosophic closed sets in neutrosophic topological spaces was introduced by Dhavaseelan et al. [4]. Recently, Saranya et al. [9] were introduced neutrosophic $g\alpha$-closed sets, neutrosophic $^{*}g\alpha$-closed sets and neutrosophic $b^{*}g\alpha$-closed sets in neutrosophic topological spaces.

In 1983, Mashhour et al. [6] introduced supra topological spaces and investigated some of its properties. The author has also introduced S-continuous, S^{*}-continuous functions and some separation axioms in supra topological spaces. By using the concepts of supra topology and neutrosophic topology some of the authors has defined a few of neutrosophic supra closed sets and its open sets in neutrosophic supra topological spaces. Neutrosophic α-supra closed sets, neutrosophic semi-supra closed sets, and neutrosophic pre-supra closed sets were introduced and investigated by Dhavaseelan et al. [3, 5] and Parimala et al. [7].

The present study introduces the notion of neutrosophic supra g-closed set, neutrosophic supra $^{*}g\alpha$-closed set, neutrosophic supra $b^{*}g\alpha$-closed set and neutrosophic supra $^{*}g\alpha$-closed set inneutrosophic supra topological spaces and the properties of these sets are discussed. Also the concept of neutrosophic supra-continuous function, neutrosophic supra-continuous function, neutrosophic supra-continuous function, neutrosophic supra $^{*}g\alpha$-continuous function and neutrosophic supra-continuous functions inneutrosophic supra topological spaces are introduced and discussed its properties. Section 2 gives some preliminary definitions, which has been used for proving the new results. The notion of neutrosophic supra b-closed set, neutrosophic supra g-closed set, neutrosophic supra $g\alpha$-closed set, neutrosophic supra ${}^{*}g\alpha$- closed set and neutrosophic supra $b^{*}g\alpha$- closed set on neutrosophic supra topological spaces along with investigation of some related properties has been introduced and discussed in Section 3. In Section 4, neutrosophic supra g-continuous function, neutrosophic supra $g\alpha$-continuous function, neutrosophic supra ${}^{*}g\alpha$- continuous function and neutrosophic supra $b^{*}g\alpha$- continuous functions has been introduced and derived some properties based on these newly defined continuous functions. Finally, the conclusion of the present work has been given in Section 5.

2. Preliminary Definitions

We recall the basic definitions of neutrosophic set, complement of a neutrosophic set, union of neutrosophic sets, intersection of neutrosophic sets, neutrosophic topology from [8] and supra topology from [6].

Notation: From the upcoming results (X, τ) and (Y, σ) denotes the neutrosophic supra topological spaces.

Definition 2.1. [3]. A neutrosophic set in a neutrosophic supra topological space (X, τ) is called a neutrosophic α-supra $(s - N_{\alpha}$- in brief) closed set if- $s - N\,\text{int}\,(s - N\,\text{int}\,(s - Ncl(E))) \subseteq E$.

Definition 2.2 [5]. A neutrosophic set inaneutrosophic supra topological space (X, τ) is called a neutrosophic semi-supra $(s - N_{\alpha}$- in brief) closed set if- $s - N\,\text{int}\,(s - Ncl(E)) \subseteq E$.

Definition 2.3 [7]. A neutrosophic set in a neutrosophic supra topological space (X, τ) is called a neutrosophic pre-supra $(s - N_{p}$- in brief) closed set if- $s - Ncl\,(s - N\,\text{int}\,(E)) \subseteq E$.

Remark 2.4. A neutrosophic set in a neutrosophic supra topological space (X, τ) is called neutrosophic semi-supra open (resp. neutrosophic α-supra open and neutrosophic pre-supra open) [briefly NSSOS, NαSOS and NPSOS] if the complement of E is a neutrosophic semi-supra closed (resp. neutrosophic α-supra closed and neutrosophic pre-supra closed).

Definition 2.5 [3]**.** A function $f : (X, \tau) \to (Y, \sigma)$ is called neutrosophic α-supra continuous if $f^{-1}(E)$ is a neutrosophic α-supra closed set of (X, τ) for every neutrosophic closed set E of (Y, σ).

Definition 2.6 [5]**.** A function $f : (X, \tau) \to (Y, \sigma)$ is called neutrosophic semi-supra continuous if $f^{-1}(E)$ is a neutrosophic semi-supra closed set of (X, τ) for every neutrosophic closed set E of (Y, σ).

Definition 2.7 [7]**.** A function $f : (X, \tau) \to (Y, \sigma)$ is called neutrosophic pre-supra continuous if $f^{-1}(E)$ is a neutrosophic pre-supra closed set of (X, τ) for every neutrosophic closed set E of (Y, σ).

3. Neutrosophic Supra $b^{*}g\alpha$- Closed Sets

Definition 3.1. Let E be a subset of a neutrosophic supra topological space (X, τ). Then E is called

(i) a neutrosophic supra $g\alpha(s-N_{g}$ in brief)-closed set if $s-Ncl\,(E) \subseteq V$ whenever $E \subseteq V$ and V is neutrosophic supra open in (X, τ).

(ii) a neutrosophic supra $g\alpha(s-N_{g\alpha}$ in brief)-closed set if $s-N\alpha cl\,(E) \subseteq V$ whenever $E \subseteq V$ and V is neutrosophic supra α-open in (X, τ).

(iii) a neutrosophic supra ${}^{*}g\alpha(s-N_{g\alpha}$ in brief)-closed set if $s-Ncl\,(E) \subseteq V$ whenever $E \subseteq V$ and V is neutrosophic supra $g\alpha$-open in (X, τ).

Remark 3.2. Let be a neutrosophic set of a neutrosophic supra topological space (X, τ). Then the complement of neutrosophic supra $g\alpha$-closed and neutrosophic supra ${}^{*}g\alpha$-closed sets are neutrosophic supra $g\alpha$-open.

Definition 3.3. Let E be a subset of a neutrosophic supra topological space (X, τ). Then E is called a neutrosophic supra $b^{*}g\alpha(s-N_{b^{*}g\alpha}$ in brief)-closed set if $s-N_{b}cl(E) \subseteq V$ whenever $E \subseteq V$ and is neutrosophic supra $^{*}g\alpha$- open in (X, τ). The complement of neutrosophic supra $b^{*}g\alpha$- closed set is neutrosophic supra $b^{*}g\alpha$- open set in (X, τ).

Example 3.4. Let $X = \{l, m, n\}$ and the neutrosophic sets P and Q are defined as,

$P = \{\langle x, (0.2, 0.2, 0.1), (0.2, 0.1, 0.1), (0.2, 0.3, 0.2)\rangle\}$ for all $x \in X$,

$Q = \{\langle x, (0.2, 0.3, 0.2), (0.5, 0.5, 0.5), (0.3, 0.3, 0.3)\rangle\}$ for all $x \in X$ and

$P \cup Q = \{\langle x, (0.2, 0.3, 0.2), (0.5, 0.5, 0.5), (0.2, 0.3, 0.2)\rangle\}$ for all $x \in X$.

Then the neutrosophic supra topology $\tau = \{0_{N}, P, Q, P \cup Q, 1_{N}\}$, which are neutrosophic supra open sets in the neutrosophic supra topological space (X, τ).

$T = \{\langle x, (0.3, 0.3, 0.3), (0.5, 0.5, 0.5), (0.2, 0.2, 0.2)\rangle\}$ for all $x \in X$ and

$R = \{\langle x, (0.2, 0.3, 0.2), (0.5, 0.5, 0.5), (0.2, 0.2, 0.2)\rangle\}$ for all $x \in X$.

Then T is a neutrosophic supra $^{*}g\alpha$- open set and R is a neutrosophic supra $b^{*}g\alpha$- closed set of a neutrosophic supra topological space (X, τ).

Theorem 3.5. *In the neutrosophic supra topological space* (X, τ), *if a subset E is a neutrosophic supra closed set then it is a neutrosophic supra* $b^{*}g\alpha$- *closed set.*

Proof. Let $E \subseteq V$, where V is neutrosophic supra $^{*}g\alpha$- open in X. Since E is neutrosophic supra closed in X, $s-Ncl(E)$. But $s-N_{b}cl(E) \subseteq s-Ncl(E) \subseteq V$, which implies $s-N_{b}cl(E) \subseteq V$. Therefore E is neutrosophic supra $b^{*}g\alpha$- closed.

The converse of the above theorem 3.5 need not be true by the following example.

Example 3.6. Let $X = \{l, m, n\}$ and the neutrosophic sets P and Q are defined as,

$P = \{\langle x, (0.2,. 0.2, 0.1), (0.2, 0.1, 0.1), (0.2, 0.3, 0.2)\rangle\}$ for all $x \in X$,

$Q = \{\langle x, (0.2, 0.3, 0.2), (0.5, 0.5, 0.5), (0.3, 0.3, 0.3)\rangle\}$ for all $x \in X$ and

$P \cup Q = \{\langle x, (0.2, 0.3, 0.2), (0.5, 0.5, 0.5), (0.2, 0.3, 0.2)\rangle\}$ for all $x \in X$.

Then the neutrosophic supra topology $\tau = \{0_N, P, Q, P \cup Q, 1_N\}$, which are neutrosophic supra open sets in the neutrosophic supra topological space (X, τ).

If $P' = \{\langle x, (0.3, 0.3, 0.3), (0.5, 0.5, 0.5), (0.2, 0.2, 0.2)\rangle\}$ for all $x \in X$ and

$Q' = \{\langle x, (0.2, 0.3, 0.2), (0.5, 0.5, 0.5), (0.2, 0.2, 0.2)\rangle\}$ for all $x \in X$,

If $R = \{\langle x, (0.2, 0.3, 0.2), (0.5, 0.5, 0.5), (0.2, 0.2, 0.2)\rangle\}$ for all $x \in X$, which implies the neutrosophic set R is a neutrosophic supra $b^* g\alpha$- closed set but it is not a neutrosophic supra closed set of a neutrosophic supra topological space (X, τ). Since $R \notin \tau'$.

Theorem 3.7. *In the neutrosophic supra topological space (X, τ), if a subset E is a neutrosophic supra $g\alpha$- closed set then it is a neutrosophic supra $b^* g\alpha$- closed set.*

Proof. Let $E \subseteq V$, where V is neutrosophic supra $b^* g\alpha$- open in X. Since every neutrosophic supra $^* g\alpha$- open set is neutrosophic supra α-open, V is neutrosophic supra α-open. Since E is neutrosophic supra $g\alpha$- -closed in X, $s - N_\alpha cl(E) \subseteq V$. But $s - N_b cl(E) \subseteq N_\alpha cl(E) \subseteq V$, which implies $s - N_b cl(E) \subseteq V$. Therefore E is neutrosophic supra $b^* g\alpha$- closed.

The converse of the above Theorem 3.7 need not be true by the following example.

Example 3.8. Let $X = \{l, m, N\}$ and the neutrosophic sets and are defined as,

$P = \{\langle x, (0.2, 0.2, 0.1), (0.2, .1, 0.1), (0.2, 0.3, 0.2)\rangle\}$ for all $x \in X$,

$Q = \{\langle x, (0.2, 0.3, 0.2), (0.5, 0.5, 0.5), (0.3, 0.3, 0.3)\rangle\}$ for all $x \in X$ and

$P \cup Q = \{\langle x, (0.2, 0.3, 0.2), (0.5, 0.5, 0.5), (0.2, 0.3, 0.2)\rangle\}$ for all $x \in X$.

Then the neutrosophic supra topology $\tau = \{0_N, P, Q, P \cup Q, 1_N\}$, which are neutrosophic supra open sets in the neutrosophic supra topological space (X, τ).

If $U' = \{\langle x, (0.2, 0.3, 0.2), (0.5, 0.5, 0.5), (0.3, 0.3, 0.2)\rangle\}$ for all $x \in X$ is a neutrosophic supra $g\alpha$-closed set and if

$R = \{\langle x, (0.2, 0.3, 0.2), (0.5, 0.5, 0.5), (0.2, 0.2, 0.2)\rangle\}$ for all $x \in X$, which implies the neutrosophic set R is a neutrosophic supra $b^{*}g\alpha$-closed set but it is not a neutrosophic supra $g\alpha$-closed set of a neutrosophic supra topological space (X, τ).

Theorem 3.9. *In the neutrosophic supra topological space* (X, τ), *if a subset E is a neutrosophic supra* $^{*}g\alpha$-*closed set then it is a neutrosophic supra* $b^{*}g\alpha$-*closed set.*

Proof. Let $E \subseteq V$, where V is neutrosophic supra $^{*}g\alpha$-open in X. Since every neutrosophic supra $^{*}g\alpha$-open set is neutrosophic supra $g\alpha$-open, V is neutrosophic supra $g\alpha$-open. Since E is neutrosophic supra $^{*}g\alpha$-closed in X, $s - Ncl(E) \subseteq V$. But $s - N_b cl(E) \subseteq s - cl(E) \subseteq V$, which implies $s - N_b cl(E) \subseteq V$.

Therefore E is neutrosophic supra $b^{*}g\alpha$-closed.

The converse of the above Theorem 3.9 need not be true by the following example.

Example 3.10. Let $X = \{l, m, n\}$ and the neutrosophic sets P and Q are defined as,

$P = \{\langle x, (0.2, 0.2, 0.1), (0.2, 0.1, 0.1), (0.2, 0.3, 0.2)\rangle\}$ for all $x \in X$,

$Q = \{\langle x, (0.2, 0.3, 0.2), (0.5, 0.5, 0.5), (0.3, 0.3, 0.3)\rangle\}$ for all $x \in X$ and

$P \cup Q = \{\langle x, (0.2, 0.3, 0.2), (0.5, 0.5, 0.5), (0.2, 0.3, 0.2)\rangle\}$ for all $x \in X$.

Then the neutrosophic supra topology $\tau = \{0_N, P, Q, P \cup Q, 1_N\}$, which are neutrosophic supra open sets in the neutrosophic supra topological space (X, τ).

If $T' = \{\langle x, (0.2, 0.2, 0.2), (0.5, 0.5, 0.5), (0.3, 0.3, 0.3)\rangle\}$ for all $x \in X$ is a neutrosophic supra $^*g\alpha$-closed set and if $R = \{\langle x, (0.2, 0.3, 0.2), (0.5, 0.5, 0.5), (0.2, 0.2, 0.2)\rangle\}$ for all $x \in X$, which implies the neutrosophic set R is a neutrosophic supra $b^*g\alpha$-closed set but it is not a neutrosophic supra $^*g\alpha$-closed set of a neutrosophic supra topological space (X, τ).

Remark 3.11. In the neutrosophic supra topological space (X, τ),

(i) every neutrosophic supra $^*g\alpha$-closed set is a neutrosophic supra α-closed set.

(ii) every neutrosophic supra $^*g\alpha$-closed set is a neutrosophic supra $^*g\alpha$-closed set.

4. Neutrosophic Supra $b^*g\alpha$- Continuous Functions

Definition 4.1. Let (X, τ) and (Y, σ) be two neutrosophic supra topological spaces. Then a mapping $f : (X, \tau) \to (Y, \sigma)$ is called,

(i) a neutrosophic supra g-continuous on X if $f^{-1}(E)$ is a neutrosophic supra g-closed (resp.neutrosophic supra g-open) set of X for every neutrosophic closed (resp. neutrosophic open) set E of Y.

(ii) a neutrosophic supra $g\alpha$-continuous on X if $f^{-1}(E)$ is a neutrosophic supra $g\alpha$-closed (resp. neutrosophic supra $g\alpha$-open) set of X for every neutrosophic closed (resp. neutrosophic open) set E of Y.

(iii) a neutrosophic supra $^{*}g\alpha$- continuous on X if $f^{-1}(E)$ is a neutrosophic supra $^{*}g\alpha$- closed (resp.neutrosophic supra $^{*}g\alpha$- open) set of X for every neutrosophic closed (resp.neutrosophic open) set E of Y.

(iv) a neutrosophic supra $b^{*}g\alpha$- continuous on X if $f^{-1}(E)$ is a neutrosophic supra $b^{*}g\alpha$- closed (resp.neutrosophic supra $b^{*}g\alpha$- open) set of X for every neutrosophic closed (resp.neutrosophic open) set E of Y.

Theorem 4.2. *Let X and Y be any two neutrosophic supra topological spaces. Let $f : (X, \tau) \to (Y, \sigma)$ be neutrosophic supra continuous function, then f is neutrosophic supra $b^{*}g\alpha$- continuous.*

Proof. Let E be any neutrosophic closed set in (Y, σ). Since f is neutrosophic supra continuous, $f^{-1}(E)$ is neutrosophic supra closed in X. We know that every neutrosophic supra closed set is neutrosophic supra $b^{*}g\alpha$- closed set. Hence $f^{-1}(E)$ is neutrosophic supra $b^{*}g\alpha$- closed set in X. Therefore f is neutrosophic supra $b^{*}g\alpha$- continuous.

The converse of the above Theorem 4.2 need not be true by the following example.

Example 4.3. Let $X = \{l, m, n\}$ and $Y = \{p, q, r\}$

$P = \{\langle x, (0.2, 0.2, 0.1), (0.2, 0.1, 0.1), (0.2, 0.3, 0.2)\rangle\}$ for all $x \in X$,

$Q = \{\langle x, (0.2, 0.3, 0.2), (0.5, 0.5, 0.5), (0.3, 0.3, 0.3)\rangle\}$ for all $x \in X$,

$R = \{\langle x, (0.2, 0.2, 0.2), (0.5, 0.5, 0.5), (0.2, 0.3, 0.2)\rangle\}$ for all $y \in Y$ and

$S = \{\langle x, (0.7, 0.7, 0.6), (0.8, 0.8, 0.8), (0.1, 0.2, 0.1)\rangle\}$ for all $y \in Y$.

Then $\tau = \{0_N, P, Q, P \cup Q, 1_N\}$ be a neutrosophic supra topology on X.

Then the neutrosophic supra topology σ on Y is defined as, $\sigma = \{0_N, R, S, R \cup S, 1_N\}$. Define a mapping by $f(l) = p$, $f(m) = q$ and $f(n) = r$. Then f is a neutrosophic supra $b^{*}g\alpha$- continuous but it is not a neutrosophic supra continuous. Since the neutrosophic supra closed set $[R']$

in (Y, σ) is a neutrosophic supra $b^*g\alpha$-closed in (X, τ) but it is not a neutrosophic supra closed set in (X, τ).

Theorem 4.4. *Let X and Y be any two neutrosophic supra topological spaces. Let* $f:(X, \tau) \to (Y, \sigma)$ *be neutrosophic supra* $g\alpha$-*continuous function, then f is neutrosophic supra* $b^*g\alpha$-*continuous.*

Proof. Let E be any neutrosophic closed set in (Y, σ). Since f is neutrosophic supra g^*-continuous, $f^{-1}(E)$ is neutrosophic supra g^*-closed in X. We know that every neutrosophic supra g^*-closed set is neutrosophic supra $b^*g\alpha$-closed set. Hence $f^{-1}(E)$ is neutrosophic supra $b^*g\alpha$-closed set in X. Therefore f is neutrosophic supra $b^*g\alpha$-continuous.

The converse of the above Theorem 4.4 need not be true by the following example.

Example 4.5. Let $X = \{l, m, n\}$ and $Y = \{p, q, r\}$

$P = \{\langle x, (0.2, 0.2, 0.1), (0.2, 0.1, 0.1), (0.2, 0.3, 0.2)\rangle\}$ for all $x \in X$,

$Q = \{\langle x, (0.2, 0.3, 0.2), (0.5, 0.5, 0.5), (0.3, 0.3, 0.3)\rangle\}$ for all $x \in X$,

$R = \{\langle x, (0.2, 0.2, 0.2), (0.5, 0.5, 0.5), (0.2, 0.3, 0.2)\rangle\}$ for all $y \in Y$ and

$S = \{\langle x, (0.7, 0.7, 0.6), (0.8, 0.8, 0.8), (0.1, 0.2, 0.1)\rangle\}$ for all $y \in Y$.

Then $\tau = \{0_N, P, Q, P \cup Q, 1_N\}$ be a neutrosophic supra topology on X.

Then the neutrosophic supra topology σ on Y is defined as, $\sigma = \{0_N, R, S, R \cup S, 1_N\}$. Define a mapping by $f(l) = p$, $f(m) = q$ and $f(n) = r$. Then f is a neutrosophic supra $b^*g\alpha$-continuous but it is not a neutrosophic supra $g\alpha$-continuous. Since the neutrosophic supra closed set $[R']$ in (Y, σ) is a neutrosophic supra $b^*g\alpha$-closed in (X, τ) but it is not a neutrosophic supra $g\alpha$-closed set in (X, τ).

Theorem 4.6. *A function* $f:(X, \tau) \to (Y, \sigma)$ *is neutrosophic supra* $b^*g\alpha$-*continuous iff the inverse image of every neutrosophic supra closed set in Y is neutrosophic supra* $b^*g\alpha$-*closed in X.*

Proof. Let f be neutrosophic supra $b^{*}g\alpha$-continuous and E be neutrosophic closed set in Y, then $Y - E$ is neutrosophic open set in X. Since f is neutrosophic supra $b^{*}g\alpha$-continuous, $f^{-1}(Y - E)$ is neutrosophic supra $b^{*}g\alpha$--open set in X. That is $X - f^{-1}(Y - E)$ is neutrosophic supra $b^{*}g\alpha$-closed set in X. Then $f^{-1}(Y) - f^{-1}(E) = X - f^{-1}(E)$ is neutrosophic supra $b^{*}g\alpha$-open in X. Therefore $f^{-1}(E)$ is neutrosophic supra $b^{*}g\alpha$-closed set in X. Thus the inverse image of every neutrosophic supra closed set in Y is neutrosophic supra $b^{*}g\alpha$- closed set in X.

Conversely, let the inverse image of every neutrosophic closed set in Y is neutrosophic supra $b^{*}g\alpha$- closed set in X. Let F be neutrosophic open set in Y. Then $Y - F$ is neutrosophic closed set in Y. Then $f^{-1}(Y - F)$ is neutrosophic supra $b^{*}g\alpha$-closed set in X. That is, $f^{-1}(Y) - f^{-1}(F) = X - f^{-1}(F)$ is neutrosophic supra $b^{*}g\alpha$-closed set in X. Therefore, $f^{-1}(F)$ is neutrosophic supra $b^{*}g\alpha$-open set in X. By definition, f is neutrosophic supra $b^{*}g\alpha$- continuous.

5. Conclusion

By extending the results of neutrosophic $b^{*}g\alpha$- closed sets in neutrosophic supra topological space, we have defined neutrosophic supra g-closed set, neutrosophic supra $g\alpha$-closed set, neutrosophic supra ${}^{*}g\alpha$-closed set, neutrosophic supra $b^{*}g\alpha$-closed set and the properties of these sets are discussed. Also these sets had been used to introduce few more new continuous functions like neutrosophic supra g-continuous function, neutrosophic supra $g\alpha$-continuous function, neutrosophic supra ${}^{*}g\alpha$-continuous function and neutrosophic supra $b^{*}g\alpha$-continuous functions in neutrosophic supra topological spaces and discussed some of their properties.

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