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ABOUT THE INSTITUTION

A nations's growth is in proportion to education and intelligence spread among the masses. Having this idealistic vision, two great philanthropists late. S.P. Nallamuthu Gounder and Late. Arutchelver Padmabhushan Dr.N.Mahalingam formed an organization called Pollachi Kalvi Kazhagam, which started NGM College in 1957, to impart holistic education with an objective to cater to the higher educational needs of those who wish to aspire for excellence in knowledge and values. The College has achieved greater academic distinctions with the introduction of autonomous system from the academic year 1987-88. The college has been Re-Accredited by NAAC and it is ISO 9001 : 2015 Certified Institution. The total student strength is around 6000. Having celebrated its Diamond Jubilee in 2017, the college has blossomed into a premier Post-Graduate and Research Institution, offering 26 UG, 12 PG, 13 M.Phil and 10 Ph.D Programmes, apart from Diploma and Certificate Courses. The college has been ranked within Top 100 (72nd Rank) in India by NIRF 2021.

ABOUT CONFERENCE

The International conference on “Emerging Trends in Science and Technology (ETIST-2021)” is being jointly organized by Departments of Biological Science, Physical Science and Computational Science - Nallamuthu Gounder Mahalingam College, Pollachi along with ISTE, CSI, IETE, IEE & RIYASA LABS on 27th OCT 2021. The Conference will provide common platform for faculties, research scholars, industrialists to exchange and discus the innovative ideas and will promote to work in interdisciplinary mode.

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Soft πg*s closed set in Soft Topological Spaces

Dr. V. Chitra[1], **R.Kalaivani**[2],

Abstract - The objective of this paper is define a new soft set namely soft πg*s closed set in soft topological spaces and to discuss some of their basic properties. Also relationship with other soft sets are investigated.

Keywords *soft gs closed, soft g^*s closed, soft $g^*\beta$ closed, soft πgs closed, soft πg^*s closed.*
2010 Subject classification: *54A20, 06D72*

1 Introduction

Soft set theory is a generalization of fuzzy set theory, that was proposed by Molodtsov [6] in 1999 to deal with uncertainty in a parametric manner. Soft set theory is a new mathematical tool which is applied in several directions such as smoothness of functions, Game theory, Riemann Integration, Operation Research and theory of measurement.
Muhammad shabir [9] et al introduced soft topology in 2011. Several authors established the concepts of soft topological space and this concept is used to solve many real life problems. Gnanambal Ilango and Mrudula Ravindran[2] introduced soft pre open sets and proved some of its properties in soft topological spaces in 2013.
In 2014, Mahanta J and Das P.K [4] introduced soft semi open sets and discussed some of their properties. Soft α -open sets was introduced by Metin Akdag and Alken Ozkan[5] in 2014. They investigated and discussed the concepts of soft α - continuous and soft α - functions. The same authors introduced soft β-open set in 2014.
K.Kannan[3] defined generalized soft closed set and he also discussed the concepts of this set in soft topological spaces. In 2013, A.Selvi and Arockiarani [8] were introduced soft πg closed set and M. Suraiya begam and M. Sheik john[10] were defined a new soft set namely soft g*s closed set in soft topological spaces.
In this paper we introduced soft πg*s closed set in soft topological spaces and we discussed some of its properties. Also we investigated relationship between this set and some soft sets.

2 Preliminaries

This section contains basic definition and result of soft sets. These are used to extend and investigate the properties of soft sets.

Definition 2.1. *[6] Let U be a universe set, E be a set of parameters and P(U) be the power set of U. For $A \subset E$, (F,A) is called a soft set over U, where F: $A \rightarrow P(U)$.*
In other words, a soft set over U is a parameterized family of subsets of U i.e, for $a \in A$, F(a) may be considered as the set of a approximate elements of the soft set (F,A).

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Definition 2.2. *[6] Let F and G be two soft sets over X. Then , we have*
(i) F is a null soft set, ϕ if F(e)= ϕ for every e$\in$ E.
(ii) F is an absolute soft set, X, if F(e)= X, for every e$\in$E.
(iii) F is a soft subset of G, F$\subseteq$G, if F(e) $\subseteq$ G(e) for every e$\in$ E.
(iv) F and G are soft equal, F=G, if F$\subseteq$G and G$\subseteq$F.
(v) The soft union of F and G, F$\cup$G , is a soft over X and defined by F$\cup$G: E$\rightarrow$P(X) such that F$\cup$G(e)=F(e)$\cup$G(e) for every e$\in$E.
(vi) The soft intersection of F and G, F$\cap$G, is a soft over X and defined by F$\cap$G: E$\rightarrow$P(X) such that F$\cap$G(e)=F(e)$\cap$G(e) for every e$\in$E.
(vii) The soft complement (X-F) of a soft set F, F^c and defined be F^c: E$\rightarrow$P(X) such that $F^{\,c}$(e)=X F(e) for every e$\in$E.

Definition 2.3. *[9] Let $F_A \in S(U)$. A soft topology on F_A, denoted by τ, is collection of subsets of F_A having the following properties:*
(i) F_ϕ, $F_A \in \tau$.
(ii)$\{F_{A_i} \subseteq F_A : i \in I \subseteq N\} \subseteq \tau \Rightarrow \cup_{i\in I} F_{A_i} \in \tau$.
(iii) $\{F_{A_i} \subseteq F_A : 1 \leq i \leq n, n\in N\} \subseteq \tau \Rightarrow \cap_{i=I} F_{A_i} \in \tau$.
The pair (F_A, τ) is called a soft topological space. Then every element of τ is called a soft open set. F_ϕ and F_A are soft open sets.

Definition 2.4. *[9] (i) Let (F_A, τ) be a soft topological space and $F_B \subseteq F_A$. Then, the soft interior of F_B, denoted ${F^0}_B$, is defined as the soft union of all soft open subsets of F_B.*
(ii) Let (F_A, τ) be a soft topological space and $F_B \subseteq F_A$. Then, the soft closure of F_B, denoted F_B, is defined as the soft intersection of all soft closed supersets of F_B.

Definition 2.5. *A soft subset (A,E) of a soft topological space (X,τ,E) is called*
i) a soft pre open set[2] if (A,E) $\subseteq$ sint(scl(A,E)).
ii) a soft semi open set[4] if (A,E) $\subseteq$ scl(sint(A,E)).
iii) a soft α open set[5] if (A,E) $\subseteq$ sint(scl(sint(A,E))).
iv) a soft β open set[5] if (A,E) $\subseteq$ scl(sint(scl(A,E))).
v) a soft regular open set[3] if (A,E) = sint(scl(A,E)).
vi) a soft π open set[8] if (A,E) is the finite union of soft regular open sets.
The complement of the soft pre open, soft semi open, soft α open, soft β open, soft regular open and soft π open sets are called soft pre closed, soft semi closed, soft α closed, soft β closed, soft regular closed and soft π closed sets.
The intersection of all soft semi closed (resp.soft pre closed,soft α closed, soft β closed, soft regular closed and soft π closed)sets containing a subset (A,E) of (X,τ,A) is called the soft semi closure (resp. soft pre closure, soft α closure, soft β closure, soft regular closure and soft π closure) of (A,E) and is denoted by sscl(A,E) (resp. spcl(A,E), sαcl(A,E), sβcl(A,E), srcl(A,E) and sπcl(A,E)).

Definition 2.6. *A soft subset (A,E) of a soft topological space (X,τ,E) is called*
i) a soft generalized closed set[3] (briefly soft g set) if cl(A)$\subseteq$(U,E) whenever (A,E)$\subseteq$(U,E) and (U,E) is soft open in (X,τ,A).
ii) a soft generalized semi closed set[3] (briefly soft gs closed) if sscl(A,E)$\subseteq$(U,E) whenever (A,E)$\subseteq$(U,E) and (U,E) is soft open in (X,τ,A).
iii) a soft π generalized closed set[8] (briefly soft πg closed) if scl(A,E)$\subseteq$(U,E) whenever (A,E)$\subseteq$(U,E) and (U,E) is soft π open in (X,τ,A).

iv) a soft π generalized semi closed set [1](briefly soft πgs closed) if sscl(A,E)$\subseteq$(U,E) whenever (A,E)$\subseteq$(U,E) and (U,E) is soft π open in (X,τ,A).
v) a soft $g^*\beta$ closed set[7] (briefly soft $g^*\beta$ closed) if sβcl(A,E)$\subseteq$(U,E) whenever (A,E)$\subseteq$(U,E) and (U,E) is soft g open in (X,τ,A).
vi) a soft g^*s closed set [10](briefly soft g^*s closed) if sscl(A,E)$\subseteq$(U,E) whenever (A,E)$\subseteq$(U,E) and (U,E) is soft g open in (X,τ,A).

3 Soft πg*s closed sets

Definition 3.1. *A subset (A,E) of a soft topological space (X,τ,E) is called soft πg^*s closed set if sscl(A,E)$\subseteq$(U,E) whenever (A,E)$\subseteq$(U,E) and (U,E) is soft πg open in (X,τ,E).*

Theorem 3.2. *Every soft closed set is soft πg^*s closed.*
Proof*: Let (A,E) be any soft closed set in (X,τ,E). Let (A,E)$\subseteq$(U,E) where (U,E) is soft πg open. Then scl(A,E)= (A,E)$\subseteq$(U,E). Since every soft closed set is soft semi closed, sscl(A,E)$\subseteq$scl(A,E)$\subseteq$(U,E). Therefore (A,E) is soft πg^*s closed.*

Theorem 3.3. *Every soft semi closed set is soft πg^*s closed.*
Proof*: Let (A,E) be any soft semi closed set in (X,τ,E) and let (A,E)$\subseteq$(U,E) where (U,E) is soft πg open. By assumption, sscl(A,E)= (A,E). Since Since sscl(A,E)=(A,E)$\subseteq$(U,E). Hence (A,E) is soft πg^*s closed.*

Theorem 3.4. *Every soft α closed set is soft πg^*s closed.*
Proof*: Let (A,E) be any soft α closed set in (X,τ,E) and let (A,E)$\subseteq$(U,E) where (U,E) is soft πg open. By assumption, sαcl(A,E)= (A,E). We have sscl(A,E)$\subseteq$sαcl(A,E)=(A,E)$\subseteq$(U,E). Therefore (A,E) is soft πg^*s closed.*

Theorem 3.5. *Every soft r closed set is soft πg^*s closed.*
Proof*: Let (A,E) be a soft r closed set in (X,τ,E) and let (U,E) is soft πg open such that (A,E)$\subseteq$(U,E). Since (A,E) is soft r closed, we have srcl(A,E)=(A,E)$\subseteq$(U,E). But sscl(A,E)$\subseteq$srcl(A,E)$\subseteq$(U,E). Therefore (A,E) is soft πg^*s closed.*

Theorem 3.6. *Every soft πg^*s closed set is soft πg closed.*
Proof*: Let (A,E) be any soft πg^*s closed set in (X,τ,E). Let (A,E)$\subseteq$(U,E) where (U,E) is soft π open. Since (A,E) is soft πg^*s closed, sscl(A,E)$\subseteq$(U,E). Since every soft π open is soft πg open. Hence sscl(A,E)$\subseteq$scl(A, Therefore (A,E) is soft πg closed.*

Theorem 3.7. *Every soft πg^*s closed set is soft πgs closed.*
Proof*: Let (A,E) be any soft πg^*s closed set in (X,τ,E). Let (A,E)$\subseteq$(U,E) where (U,E) is soft π open. Since every soft π open is soft πg open. Hence sscl(A,E)$\subseteq$(U,E). Therefore (A,E) is soft πgs closed.*

Example 3.8. *Let X=$\{h_1,h_2,h_3\}$, E=$\{e_1,e_2\}$. Then τ=$\{\phi$, X, $(F_1,E),(F_2,E),(F_3,E)\}$ is a soft topological space over X and τ^c=$\{\phi$, X, $(G_1,E),(G_2,E),(G_3,E)\}$. Here, (F_1,E),(F_2,E) and (F_3,E) are soft sets defined as, $(F_1,E)=\{(e_1,\{h_1\}),(e_2,\{h_2,h_3\})\}$, $(F_2,E)=\{(e_1,\{h_1\}),(e_2,\{h_2\})\}$ and $(F_3,E)=\{(e_1,\{h_2,h_3\}),(e_2,\{h_1,h_3\})\}$ and the soft sets (G_1,E),(G_2,E) and (G_3,E) are defined as $(G_1,E)=\{(e_1,\{h_2,h_3\}),(e_2,\{h_1\})\}$, $(G_2,E)=\{(e_1,\{h_2,h_3$ and $(G_3,E)=\{(e_1,\{h_1\}),(e_2,\{h_2\})\}$.*

1. *The soft set (A,E)= $\{(e_1,\{h_3\}),(e_2,\{h_1\})\}$ is soft πg^*s closed but not soft closed.*
2. *The soft set (B,E)= $\{(e_1,\{h_2\}),(e_2,\{h_1\},\{h_3\})\}$ is soft πg^*s closed but not soft semi closed.*
3. *The soft set (C,E)= $\{(e_1,\{h_3\}),(e_2,\{h_1\},\{h_3\})\}$ is soft πg^*s closed but not soft α closed.*
4. *The soft set (D,E)= $\{(e_1,\{h_2\})\}$ is soft πg^*s closed but not soft r closed.*
5. *The soft set (F,E)= $\{(e_1,\{h_1\})\}$ is soft πg closed but not softπg^*s closed.*
6. *The soft set (G,E)= $\{(e_1,\{h_2\}),(e_1,\{h_2\})\}$ is soft πgs closed but not softπg^*s closed.*

Theorem 3.9. *Every soft πg^*s closed set is soft g^*s closed.*
Proof*: Let (A,E) be any soft πg^*s closed set in (X,τ,E). Let (A,E)⊆(U,E) where (U,E) is soft g open. Since every soft g open is soft πg open, (U,E) is soft πg open. Since (A,E) is soft πg^*s closed implies sscl(A,E)⊆(U,E). Hence (A,E) is soft g^*s closed.*

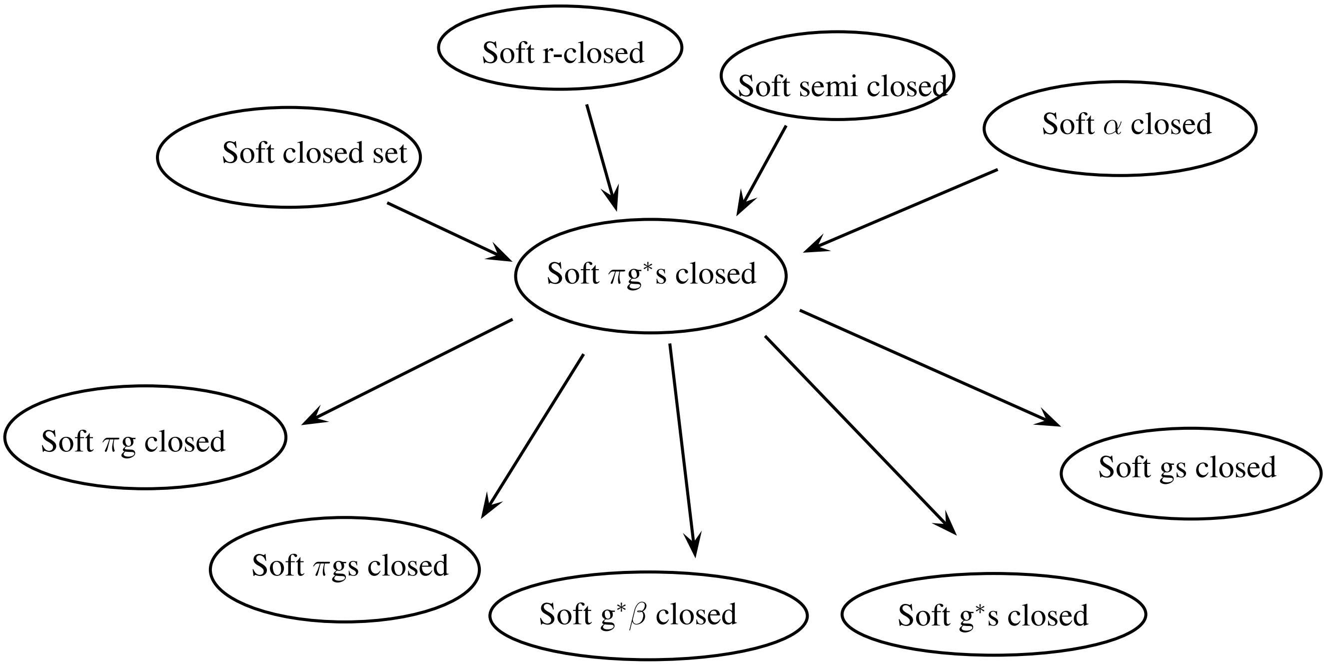
Theorem 3.10. *Every soft πg^*s closed set is soft $g^*\beta$ closed.*
Proof*: Let (A,E) be any soft πg^*s closed set in (X,τ,E). Let (A,E)⊆(U,E) where (U,E) is soft g open. Since every soft g open is soft πg open, (U,E) is soft πg open. Then sscl(A,E)⊆sβcl(A,E)⊆(U,E). Hence (A,E) is soft $g^*\beta$ closed.*

Theorem 3.11. *Every soft πg^*s closed set is soft gs closed.*
Proof*: Let (A,E) be any soft πg^*s closed set in (X,τ,E). Let (U,E) be soft open such that (A,E)⊆(U,E). Since every soft open is soft πg open we have sscl(A,E)⊆(U,E). Hence (A,E) is soft gs closed.*

Example 3.12. *Let X=$\{x_1,x_2\}$, E=$\{e_1,e_2\}$. Then τ=$\{\phi$, X, $(F_1,E),(F_2,E)\}$ is a soft topological space over X and τ^c=$\{\phi$, X, $(G_1,E),(G_2,E)\}$. Here, $(F_1,E),(F_2,E)$ are soft sets defined as, $(F_1,E)=\{(e_1,\{x_2\}),(e_2,\{x_1\})\}$, $(F_2,E)=\{(e_1,\{x_1\}),(e_2,\{x_2\})\}$ and the soft sets $(G_1,E),(G_2,E)$ are defined as $(G_1,E)=\{(e_1,\{x_1\}),(e_2,\{x_2\})\}$, $(G_2,E)=\{(e_1,\{x_2\}),(e_2,\{x_1\})\}$.*

1. *The soft set (B,E)= $\{(e_2,\{x_1\})\}$ is soft g^*s closed but not soft πg^*s closed.*
2. *The soft set (C,E)= $\{(e_1,\{x_2\}),(e_2,\{x_2\})\}$ is soft $g^*\beta$ closed but not soft πg^*s closed.*
3. *The soft set (D,E)= $\{(e_1,\{x_1\})\}$ is soft gs closed but not soft πg^*s closed.*

Summing up the above implications, we get the following diagram.



However, the converse implications are not true as seen by the above examples.

4 Characterization of soft πg*s closed sets

Theorem 4.1. *If (A,E) is both soft πg open and soft πg^*s closed set in X, then (A,E) is soft semi closed.*
Proof*: Let (A,E) be soft πg open and soft πg^*s closed. Therefore sscl(A,E)$\subseteq$(A,E). But (A,E)$\subseteq$sscl(A,E). We have (A,E)= sscl(A,E). Hence (A,E) is soft semi closed.*

Theorem 4.2. *A subset (A,E) of X is soft πg^*s closed iff sscl(A,E)-(A,E) contains no non-empty soft closed set in X.*
Proof*: Let (A,E) be a soft πg^*s closed set. Assume that (B,E) is a non empty softπg closed set, (B,E)$\subseteq$sscl(A,E)-(A,E). Then we have (B,E)$\subseteq$sscl(A,E)$\cap$ (A,E)^c, since sscl(A,E)-(A,E)= sscl(A,E)$\cap$ (A,E)^c. Therefore (B,E)$\subseteq$sscl(A,E) and (B,E)$\subseteq$(A,E)^c. Since (B,E)^c is soft πg open. Now, by the definition of soft πg^*s closed set, sscl(A,E)$\subseteq$(B,E)^c, ie) (B,E)$\subseteq$ $(sscl(A,E))^c$. Hence (B,E)$\subseteq$sscl(A,E) $\cap$ (sscl(A,E))^c =ϕ, which is a contradiction. Therefore sscl(A,E)-(A,E) contains no non empty soft closed set in X.*
Conversely, assume that sscl(A,E)-(A,E) contains no non empty soft closed set. Let (A,E)$\subseteq$(U,E) , (U,E) is soft πg open. Suppose that sscl(A,E) is not contained in (U,E), then sscl(A,E)$\cap$ (U,E)^c is a non empty closed subset of sscl(A,E)-(A,E) which is a contradiction. Therefore sscl(A,E)$\subseteq$ (U,E) and hence (A,E) i soft πg^*s closed set.

Theorem 4.3. *If (A,E) is a soft πg^*s closed set in X and (A,E)$\subseteq$(B,E)$\subseteq$sscl(A,E) then (B,E) is soft πg^*s closed set in X.*
Proof*: Let (B,E)$\subseteq$(U,E) and (U,E) be soft π open. Given (A,E)$\subset$(B,E). Since (A,E) is soft πg^*s closed then (A,E)$\subset$(B,E) implies sscl(A,E)$\subseteq$(U,E). Now sscl(B,E)$\subseteq$sscl(sscl(A,E))= sscl(A,E)$\subseteq$(U,E). Hence (B,E) is soft πg^*s closed set.*

Theorem 4.4. *If (A,E)$\subset$X is soft πg^*s closed then sscl(A,E)-(A,E) is soft πg open.*
Proof*: Let (A,E) be a soft πg^*s closed in X. Let (F,E) be a soft πg closed set such that (F,E)$\subseteq$sscl(A,E)-(A,E). Then sscl(A,E)-(A,E) does not contain any non empty soft πg closed set. Therefore (F,E)=ϕ, so (F,E)$\subseteq$int(sscl(A,E)-(A,E)). This shows that (F,E)$\subseteq$sscl(A,E)-(A,E) is soft πg open.*

Remark 4.5. *Finite union of soft πg^*s closed set need not be πg^*s closed set.*

Example 4.6. *From Example 3.13, (A,E)= $\{(e_2,\{x_2\})\}$ and (B,E)= $\{(e_1,\{x_2\}),(e_2,\{x_1\})\}$ then union (A,E)$\cup$(B,E)= $\{(e_1,\{x_2\}),(e_2,\{x_1,x_2\})\}$ is not soft πg^*s closed set .*

Remark 4.7. *Finite intersection of soft πg^*s closed set need not be πg^*s closed set.*

Example 4.8. *From Example 3.8, (A,E)= $\{(e_1,\{h_2,h_3\}),(e_2,\{h_1,h_3\})\}$ and (B,E)= $\{(e_1,\{h_2\}),(e_2,\{h_1,h_3\})\}$ then intersection (A,E)$\cap$ (B,E)= $\{(e_2,\{h_1,h_3\})\}$ is not soft πg^*s closed set .*

Definition 4.9. *A set (A,E) is called soft πg^*s open set if its complement is soft πg^*s closed set.*

Theorem 4.10. *If (A,E)$\subseteq$X is soft πg^*s open iff (F,E)$\subseteq$ssint(A,E) whenever (F,E) is contained in (A,E) and (F,E) is soft πg closed.*
Proof*: Let (A,E) be soft πg^*s open. Let (F,E)$\subseteq$(A,E) and (F,E) is soft πg closed. Then X - (A,E)$\subseteq$ X - (F,E). X - (F,E) is soft πg open. Therefore sscl (X - (A,E))$\subseteq$ X - (F,E).*
ie) X - ssint(A,E)$\subseteq$ X - (F,E).
Thus, (F,E)$\subseteq$ssint(A,E).

Conversely, assume that (F,E) is soft πg closed and (F,E)$\subseteq$(A,E) such that (F,E)$\subseteq$ssint(A,E). Let X - (A,E)$\subseteq$(U,E) where (U,E) is soft πg open. Then X - (U,E)$\subseteq$(A,E) and X - (U,E) is soft πg closed. By hypothesis, X - (U,E)$\subseteq$ssint(A,E). ie) X - ssint(A,E)=sscl(X - (A,E))$\subseteq$(U,E). Thus X - (A,E) is soft πg^*s closed and (A,E) is soft πg^*s open.

Theorem 4.11. *int(B,E)$\subseteq$(B,E)$\subseteq$(A,E) and (A,E) is soft πg^*s open in X, then (B,E) is soft πg^*s open in X.*
Proof*: Suppose that int(B,E)$\subseteq$(B,E)$\subseteq$(A,E) and (A,E) is soft $\pi g{*}s$ open in X then $(A,E)^c \subseteq(B,E)^c \subseteq cl(A,E)^c$. Since $(A,E)^c$ is soft πg^*s closed in X. We have (B,E) is soft $\pi g{*}s$ open in X.*

References

[1] Christy V, Mohana K, Characterizations of soft πgp closed sets in soft topological spaces,IJMA-2014, 5(4),37-43.

[2] Gnanambal Ilango and Mirudula Ravindran, On soft pre open sets in soft topological spaces, International journal of mathematics Research , vol.5, no.4, 2013,399-409.

[3] K.Kannan, Soft generalized closed sets in soft topological space, journal of theoretical and applied information technology, 37(2012), 17-20.

[4] Mahanta J and Das PK, On soft topological spaces via semi open and semi closed soft sets, KYUNGPOOK Math.j,54(2014),221-236.

[5] Metin Akdag and alkan ozkan, Soft alpha open sets and soft alpha continuous functions, Abstract and applied analysis,volume 2014,7 pages(2014).

[6] D.Molodtsov, Soft set theory first results, Comput.math.Appl vol.45(2003),555-562.

[7] A.Punithatharani and H.sujitha, Soft g$^*\beta$ closed sets in soft topological spaces,Journal of Mechanics of Continua and Mathematical Sciences vol.15,no.8,(2020).

[8] A.Selvi and I.Arockiarani, Soft πg closed sets in soft topological spaces, 79th Annual conference of Indian mathematical society, December, 28-31,2013.

[9] M.Shabir and M.Naz , On soft topological spaces, Comput.math.Appl, vol.61,no.7 pp 1786-1799(2011).

[10] M.Suraiya begam and M.Sheik john, Soft g*s closed sets in soft topological spaces, International journal of scientific research and education,4(2016),5466-5470.

BIOGRAPHY

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