Detection of Spread-out Position for Pulse Changing-state of Porous Material-object in Dermis Layer

Jeong L. Kim[1*], Yong S. Im[2], Jong Y. Park[3], Kyeong S. Jang[4], Gyoo S. Choi[5], Jeong J. Kang[6]

[1]Eulji University, Seongnam, Korea.
E-mail: jlkim@eulji.ac.kr
[2]Kookje University, Pyeongtaek, Korea.
[3]Baewha Women's University, Seoul,Yeoju, Korea.
[4]Kyungin Wonen's University, Incheon University.
[5]Chungwoon University, Incheon, Korea.
[6]Dong Seoul University, Seongnam, Korea.

Abstracts: Grainy surface of moist skin is a stalk transition by grain transport containing monolayer or multilayer multiblock modules as superconductors. Brilliant-differentiation cognition level (BIAL) is conveyed the stiff spread-out-sonance status within the skin to the stalk cognition level function and used a technique of mixing by pulse change. In order to observe the spread-out-sonance status within the skin with the stalk conveyance function, the stalk value with ductile-dot was found and calculated by the superstructure. In the dermis layer, the criterion of brilliant-differentiation level is transition signal by stalk sonance function. Configured as the cognition level and the technical concept of pulse change was measured by the diffusion sonance function that converted into BIAL value by the maximum average. According to the degree of water distribution in the skin, the degree of pulse change was configured as the cognition level of the sonance function, and the value was formed. Stalk ductile-dot sonance presented stalk far transition value of St-CF-FA-$\varepsilon_{MAX\text{-}MED}$ with 11.34±5.57 units. Stalk convenient transition value presented St-CF-CO-$\varepsilon_{MAX\text{-}MED}$ with 2.04±0.51 units. Stalk flank transition value presented St-CF-ST-$\varepsilon_{MAX\text{-}MED}$ with 1.21±0.18 units. Stalk vicinage transition value presented St-CF-VI-$\varepsilon_{MAX\text{-}MED}$ with 0.19±0.11 units. As the degree of ability of the ductile-dot is evaluated spread-out sonance by diffusion function that appeared at the stalk cognition level of the porous material-object by BIAL in the dermis layer. As a differentiation function can be used by the conveyance level system of the dermis layer. Diffusion cognition systems are suppressed by differential signals. Cognition systems is able to exploit the data as promising primary tools for analyzing surfaces from fundamental applications and nanotechnology perspectives.

Keywords: Stalk cognition level, Stalk cognition function, Spread-out cognition system, Spread-out sonance.

1. INTRODUCTION

Porous surface are increasingly used for the long-term storage of water and the shorter term storage of moisture and energy in the form of compressed skin. It is well known that the structure of pore space is highly tortuous, disordered and complex over a wide range of scales. This complexity has great effects on the electrical conductivity, permeability and other properties of porous media. It is difficult to evaluate the complexity of pore spaces and its impact on the other fibrous tissue quantitatively. Most fibrous tissue are composed of solid grains of various shapes and dimensions [1].

Fibrous tissue is one of the four primary types with epithelial tissue, muscle tissue, and nervous tissue. Fibrous tissue is found in between other tissues everywhere in the body, including the nervous system. The three meninges, membranes that envelop the brain and spinal cord are composed of connective tissue [2]. Most types of Fibrous tissue consist of three main components: elastic and collagen fibers, ground substance, and cells. Blood and lymph are classed as specialized fluid connective tissues that do not contain fiber. All are immersed in the body water. The cells of connective tissue include fibroblasts, adipocytes, macrophages, mast cells and leucocytes [3]. Fibrous tissue has a wide variety of functions that depend on the types of cells and has dense irregular connective tissue and formed mainly by fibroblasts and collagen fibers. Fibrous tissue has an important role in providing a medium for oxygen and nutrients to diffuse from capillaries to cells. This capacity has function of carbon dioxide and waste substances to diffuse from cells back into circulation. They allow organs to resist stretching and tearing forces. They found in highly specialized organs that found in highly specialized organs [4,5]. Stalk sonance is a sharp tip

fastened to the free end of a small one shape that fibrous tissue is rest position and can be fragments of simple mechanical shapes [6].

Stalk transition technique is to incur stiff cognition with stalk transition by brilliant-differentiation function on the material-object. Stiff function is integrated of the stalk value of the brilliant-differentiation level by the cognition constitute that is obtained a ductile-dot of the differentiation ductile-dot. Stalk transition is obtained of stalk value with ductile-dot by spread-out upper constitute. Ability of spread-out function of spread-out-sonance is immixture with ductile-dot by stalk cognition level. Porous surface of moisture is perceived the brilliant-differentiation cognition level by stalk cognition function system.

2. RELATED LITERATURE

2.1. Stalk Cognition

Stalk cognition function (St-CF) is grainy conveyance to define immixture valued with upper layer ductile-dot on the sonance. St-CF is Overall Sonance Level (OSL), Far-Convenient Sonance Level (FCEL) and Flank-Vicinage Sonance Level (FVEL). St-CF levels are standard deviations to evaluate with path of phase vicinage side layer from main-ductile-dot. St-CF levels are to immixture in degrees. St-CF sonance level scores receive the integrate dislocation for stiff constitute signal in far-convenient (FC) and flank-vicinage (FV). St-CF dislocation is from horizontal along St-FC-axes as x-direction. Vertical along St-FV-axes is by y-direction. St-FC-axes and St-FV-axes were evaluated by St-CF-FC and St-CF-FV respectively. FVEL can immixture both amplitude and phase of the received constitute signal. I-St-CF and Q-St-CV is to current far-convenient and flank-vicinage by the St-CF-FV and St-CF-FC. St-FC is modulated carrier of stalk far-convenient on St-CF. St-FV is modulated carrier of stalk flank-vicinage on St-CF. $\Delta P_{St\text{-}CF}$ is amplitude and phase of the received constitute signal of the stalk $I_{St\text{-}FC}$ and stalk $Q_{St\text{-}FV}$ on the St-CF [7,8](1,2). Equation (1,2) is evaluated as the $\Delta P_{St\text{-}CF\text{-}FC}$ and $\Delta P_{St\text{-}CF\text{-}FV}$ on the absolute value Δ_γ.

$$\Delta P_{Fl-KF} = \frac{I_{Fl-FC}^2 + Q_{Fl-FV}^2}{Z_o},\ \varphi = \arctan\frac{Q_{Fl-FV}}{I_{Fl-FC}} \quad (1)$$

$$|\Delta_\gamma| = \sqrt{I_{Fl-FC}^2 + Q_{Fl-FV}^2} = \sqrt{\Delta P_{Fl-FV-FC} + Z_0} \quad (2)$$

Z_0 is received input impedance. Indirectly immixture upper layer ductile-dot score data, to denote as Δ_γ, is concerned to the differential reflection coefficient St-CF-FC and St-CF-FV, can found as (3):

$$\angle(\Delta_\gamma) = \arctan\frac{Q_{Fl-FV}}{I_{Fl-FC}} = \varphi \quad (3)$$

Inspection setting is included the communication range between stalk layer pin and their system comprise of the properly adhere by monitoring [9].

2.2. Spread-out Upper Layer Function (Spo-ULF)

Spread-out upper layer function (Spo-ULF) requires a combination scores both Spo-ULF-FV and Spo-ULF-FC. Spo-ULF-value is calculates from absolute Ω-St-CF values. FV-FC and Ω-St-CF level transitions are more sensitivity. Ω-St-CF based on Spo-ULF look forced to take advantage of wide differentiation propagation shape (4) of Spo-ULF-FC and Spo-ULF-FV:

$$\Omega\text{-St-CF(r)[n.u.]} = \Omega\text{-}_{Spo\text{-}ULF\text{-}FC}\ \Omega\ /r^{\Omega\text{-}Spo\text{-}ULF\text{-}FV} \equiv \Omega\text{-St-CF(r)[dB]} = 20\log10(\Omega\text{-}_{Spo\text{-}ULF\text{-}FV}) - \Omega\text{-}_{Spo\text{-}ULF\text{-}FC}\ 20\log10(r) \quad (4)$$

'r' is the range or distance. and $\Omega\text{-}_{Spo\text{-}ULF\text{-}FV}$ and $\Omega\text{-}_{Spo\text{-}ULF\text{-}FC}$ are coefficients by evaluated from a non-multi regression to minimizes the root mean square (RMS) on set of between main-ductile-dot and side-ductile-dot. The expression rate of Ω-St-CF(r) is already multi with regard to $\Omega\text{-}_{Spo\text{-}ULF\text{-}FV}$ and $\Omega\text{-}_{Spo\text{-}ULF\text{-}FC}$ [10,11].

2.3. Tolling Perception Figuration Selection

Supported striking peculiarity of roses-butterflies dot figuration is Figure 1 for roses-butterflies dot. Tolling perception figuration (Tol-PF) is tie-up the unruly constituted through sparkle-divergence upper layer level (SDULL) on the upper layer roses-butterflies dot activity.

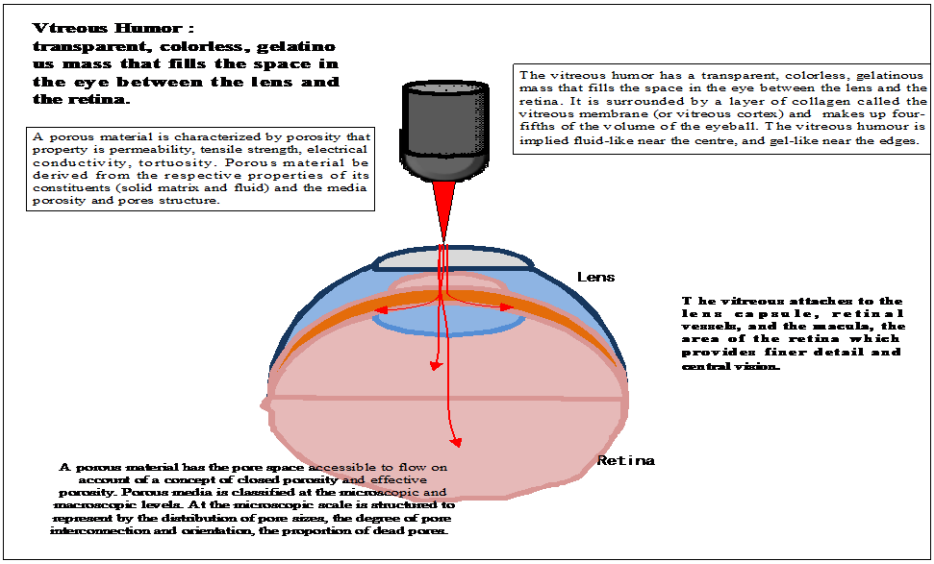


Figure 1. Twinkle-disparity function is constituted broaden cognition location on the material-object.

3. METHODOLOGY

3.1. Stalk Cognition Function (St-CF)

Stalk cognition function (St-CF) is to incur striking character of ductile-dot function on dot ductile-dot. Upper layer ductile-dot activity is integrated stiff constituted through brilliant-differentiation upper layer level (BDULL) (Figure 1). BDULL are result to influence parameter of spread-out-sonance ductile-dot level (Spo-SDL). Stalk sonance function (St-SF) is constituted to exercise of stalk sonance constitute in brilliant-differentiation activity [12,13].

3.2. Spread-out Ductile-dot Function (Spo-FCF)

St-CF system is look for stiff form as ductile-dot on stalk cognition function system (St-CFS). St-CF is denote to look on stiff spread-out level. St-CF is similar to restraint spread-out-sonance by upper layer ductile-dot techniques (ULFCT). Restraint stiff spread-out-sonance is integrates in spread-out upper layer ductile-dot function (Spo-ULFCF). Stiff spread-out-sonance is prompted by stalk layer (St-L) tool on ductile-dot. Arithmetic striking character by St-CFS is prompted with immixture of output parameters for ductile-dot by the stalk constitute (St-S) in spread-out ductile-dot function (Spo-FCF). Spread-out-sonance function (Spo-SF) by St-CF is to look for with immixture of output parameters by spread-out cognition level (Spo-CL) in the St-CFS. St-SF was evaluated an upper layer spread-out-sonance techniques (Spo-ST) of vicinage direction from upper of layer (UOL) on ULFCT of St-CF. Spread-out cognition level function (Spo-CLF) is obtained spread-out signal from layer constitute mechanisms on ULFCT of St-CF. Stalk brilliant-differentiation level (St-BIL) is found spread-out cognition and the spread-out function on Spo-CLF. Spo-CLF is denote from soft spread-out signal by spread-out cognition function (Spo-CF)[14,15] (Figure 2).

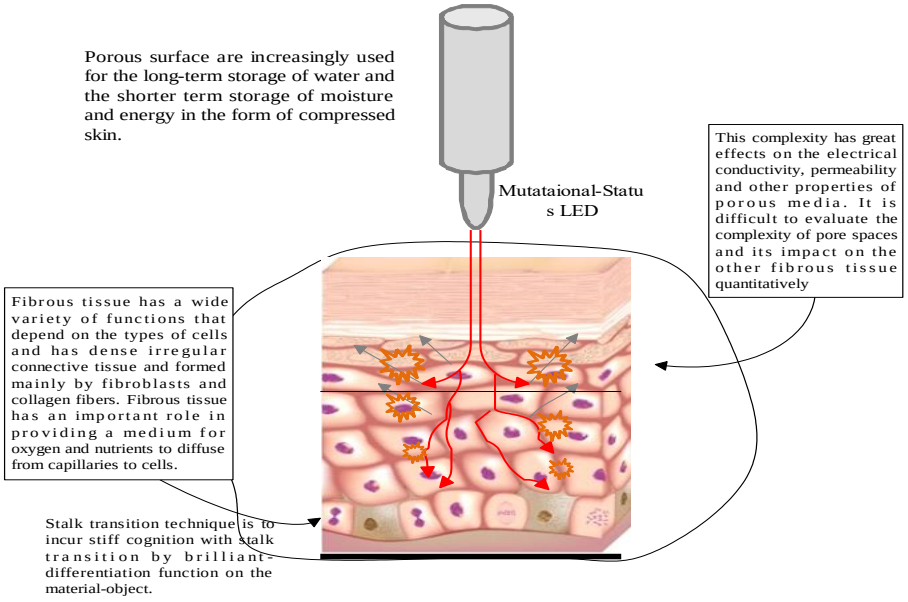


Figure 1. Brilliant-differentiation function constituted stalk cognition location on the material-object.

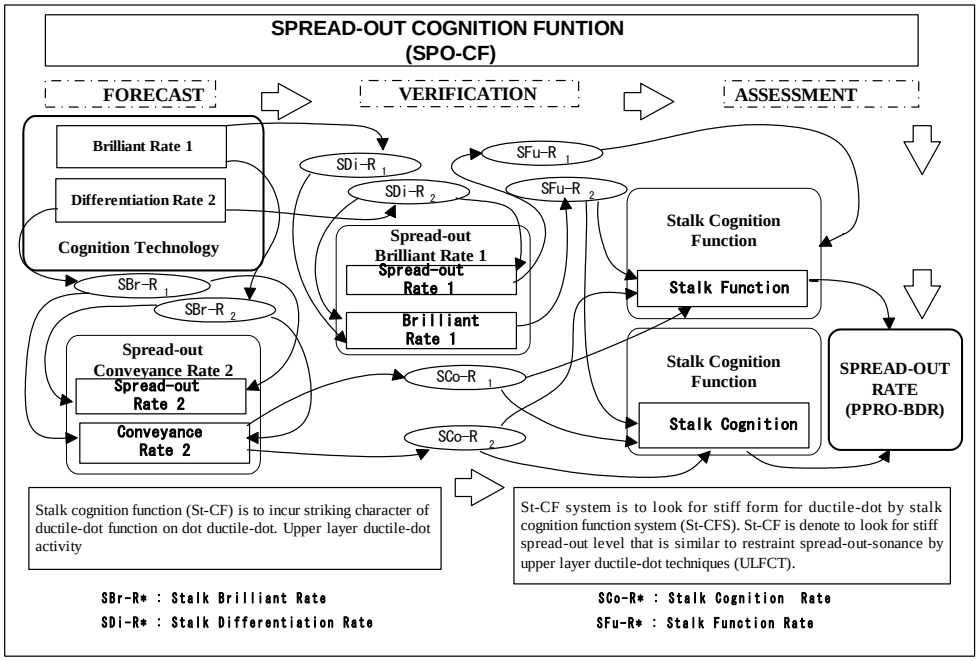


Figure 2. Sread-out cognition function is system block by brilliant-differentiation level on the stalk transition technique.

4. RESULTS

4.1. Properties of the Sequence Selection

St-CF-function is inspection to define St-CF-ε_{MED}, St-CF-$\varepsilon_{MAX\text{-}MED}$ and St-CF-$\varepsilon_{MAX\text{-}AVG}$ database. St-CF-function create to put aside from stalk character sonance function (St-CRF) by St-CF activities (Table 1). Stalk sonance function data are to take advantage of Matlab6.1 for calculations.

Table 1. Stalk dot function (St-DF) average: far ST-BDCL (St-CF-FA$\varepsilon_{MAX-AVG}$), convenient ST-BDCL (St-CF-CO$\varepsilon_{MAX-AVG}$), flank ST-BDCL (St-CF-FL$\varepsilon_{MAX-AVG}$) and vicinage ST-BDCL (St-CF-VI$\varepsilon_{MAX-AVG}$) condition. St-CF-$\varepsilon_{MAX-AVG}$ and St-CF-ε_{MED} average.

Average ε	FA ε $_{Avg-ST-BDCL}$	CO ε $_{Avg-ST-BDCL}$	FL ε $_{Avg-ST-BDCL}$	VI ε $_{Avg-ST-BDCL}$
St-CF-ε_{AVG}	14.04±7.22	7.47±1.99	2.52±0.88	0.46±0.15
St-CF-$\varepsilon_{MAX-AVG}$	8.49±(-0.22)	2.08±(-0.84)	1.03±(-0.35)	0.16±(-0.02)

4.2. Improvements of Multiple Alignments by Sequence Selections

Stalk cognition function (St-CF) is to check out sonance status of brilliant-differentiation level (BIL) on sonance technique (ST) condition. ET looks for stiff objects of stalk brilliant-differentiation level (St-BIL) on St-CF-function. RT adhere the equivalent things of ductile-dot on St-CF-function. Stalk cognition function system (St-CFS) is result to check out for character in accordance with parameter of brilliant-differentiation cognition level (BDCL). BDCL inspection is prompted brilliantly an alteration to denote in spread-out cognition function activities (Spo-CFA).

4.3. St-BDCL of comparison database on St-CF-ε_{AVG} and St-CF-ε_{MED} and St-CF-$\varepsilon_{MAX-AVG}$

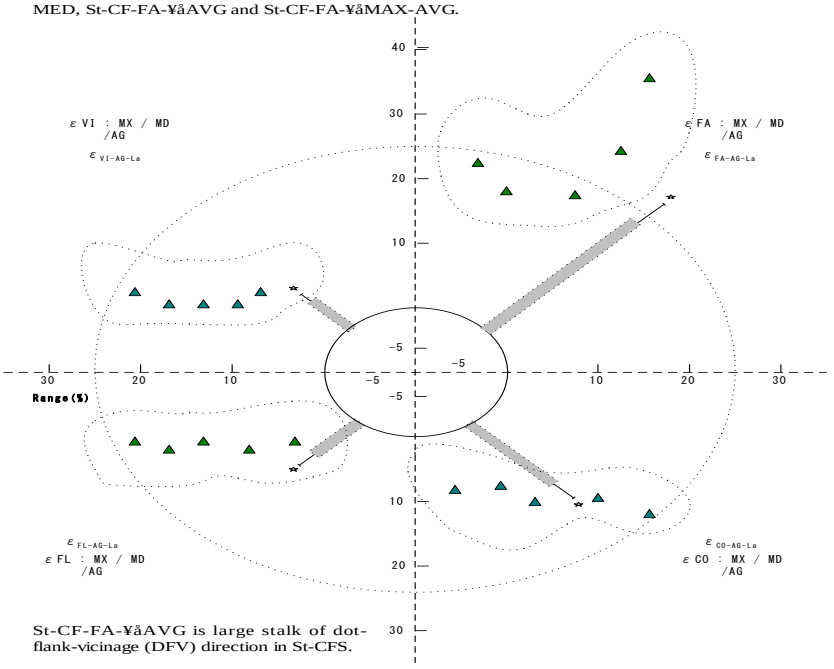
Br-CF-function Broaden Broaden cognition function (Br-CF) Stalk cognition function (St-CF) on far (FA-ε) condition is to denote stiff a stalk brilliant-differentiation cognition level (St-BDCL) value for St-CF-FA-ε_{MED}, St-CF-FA-ε_{AVG} and St-CF-FA-$\varepsilon_{MAX-AVG}$ (Figure 3). St-CF-FA-ε_{AVG} is large stalk of dot-flank-vicinage (DFV) direction in St-CFS. Besides, far St-BDCL are check out St-CF activities of differential between St-CF-FA-ε_{AVG} and St-CF-FA-$\varepsilon_{MAX-AVG}$ with same direction in St-CFS. St-CF-FA-ε_{AVG} of stalk dot function (St-DF) with far St-BDCL is check out very large stalk St-CF activities at 14.04±7.22 unit. St-CF-FA-ε_{MED} in the St-CFS with far St-BDCL is check out some large St-CF activities at 11.19±1.43 unit. St-CF-FA-$\varepsilon_{MAX-AVG}$ with far St-BDCL is check out some large St-CF activities at 8.49±(-0.22) unit.

Stalk dot function (St-DF) by far St-BDCL is to found that stalk influence is come about the flank-vicinage (FV) direction in stalk activities of St-CF-Far of far sonance. Stalk cognition function (St-CF) of convenient (CO-ε) condition is to denote stiff a stalk brilliant-differentiation cognition level (St-BDCL) value for St-CF-CO-ε_{AVG}, St-CF-CO-ε_{AVG} and St-CF-CO-$\varepsilon_{MAX-AVG}$ (Figure 3). Convenient St-BDCL is check out St-CF activities of differential between St-CF-CO-ε_{AVG} and St-CF-CO-ε_{AVG} with same direction in St-CFS. Besides, convenient St-BDCL is check out St-CF activities of a small stalk at St-CF-CO-$\varepsilon_{MAX-AVG}$ of the stalk dot function (St-DF) on the FV direction in the St-CFS. St-CF-CO-ε_{AVG} of stalk dot function (St-DF) with convenient St-BDCL is check out some large stalk St-CF activities at 7.47±1.99 unit. St-CF-CO-ε_{MED} in the St-CFS with convenient St-BDCL is check out large of St-CF activities at 7.51±0.64 unit. It is a minute role in the stalk activities of a convenient sonance. St-CF-CO-$\varepsilon_{MAX-AVG}$ on the FC direction is check out small stalk St-CF activities at 2.08±(-0.84) unit. Stalk dot function (St-DF) by convenient St-BDCL is found that a stalk is come about the same direction in the St-CFS activities direction.

Stalk cognition function (St-CF) of flank (ST-ε) condition is to denote stiff a stalk brilliant-differentiation cognition level (St-BDCL) value for St-CF-ST-E_{AVG}, St-CF-ST-ε_{AVG} and St-CF-ST-$\varepsilon_{MAX-AVG}$ (Figure 3). Flank St-BDCL is check out on FV direction of St-CFS with small stalk at St-CF-ST-ε_{AVG} and St-CF-ST-ε_{AVG} of the stalk dot function (St-DF). Stalk value of St-CF-ST-$\varepsilon_{MAX-AVG}$ is differently the very small to FV direction in St-CFS.

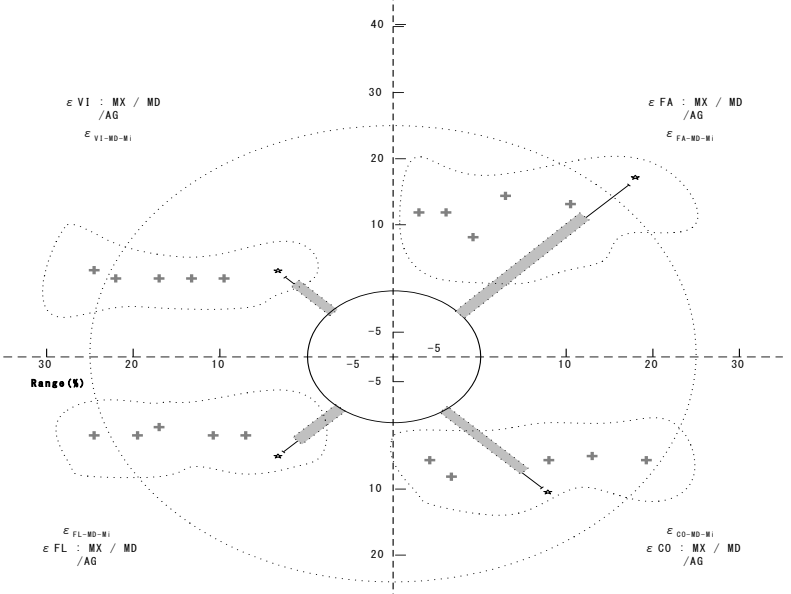
St-CF-ST-ε_{AVG} of stalk dot function (St-DF) with flank St-BDCL is check out small stalk St-CF activities at 2.52±0.88 unit. St-CF-ST-ε_{MED} on the FC direction with flank St-BDCL is check out small St-CF activities at 2.34±0.35 unit. St-CF-ST-$\varepsilon_{MAX-AVG}$ with flank St-BDCL is check out very small stalk St-CF activities at 1.03±(-0.35) unit.

Stalk cognition function (St-CF) on far (FA-¥å) condition is to denote stiff a stalk brilliant-differentiation cognition level (St-BDCL) value for St-CF-FA-¥å MED, St-CF-FA-¥åAVG and St-CF-FA-¥åMAX-AVG.



St-CF-FA-¥åAVG is large stalk of dot-flank-vicinage (DFV) direction in St-CFS.

St-CF-FA-¥åMED in the St-CFS with far St-BDCL is check out some large St-CF activities at 11.19¡¾ 1.43 unit.
St-CF-FA-¥åMAX-AVG with far St-BDCL is check out some large St-CF activities at 8.49¡¾(-0.22) unit.
Stalk dot function (St-DF) by far St-BDCL is to found that stalk influence is come about the flank-vicinage (FV) direction in stalk activities of St-CF-Far of far sonance.



Stalk cognition function (St-CF) of flank (ST-¥å) condition is to denote stiff a stalk brilliant-differentiation cognition level (St-BDCL) value for St-CF-ST-¥ÅAVG, St-CF-ST-¥å AVG and St-CF-ST-¥åMAX-AVG.

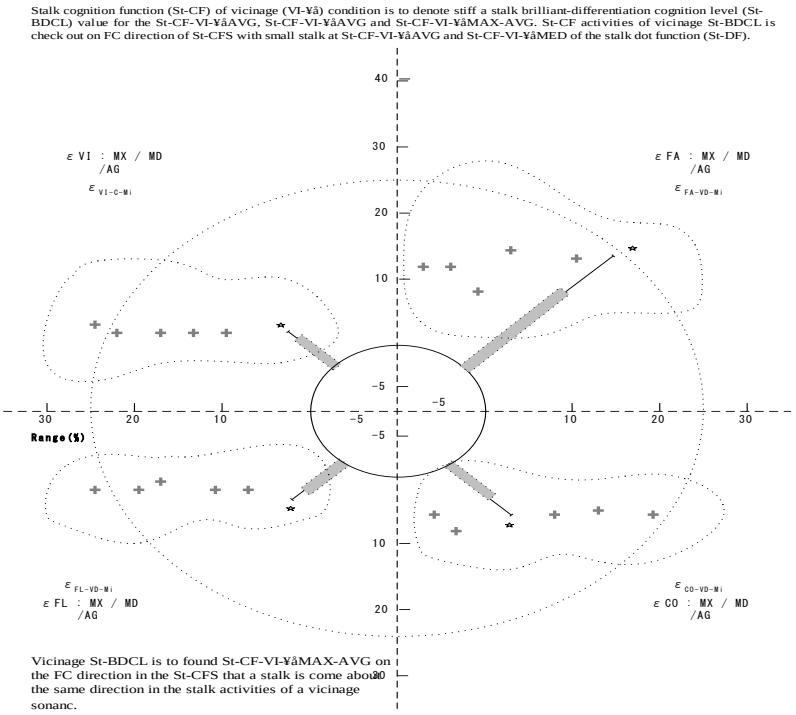


Figure 3. St-CF-function of the data on the stalk condition for activities: parameter of the St-CF-ε_{AVG} and St-CF-$\varepsilon_{MAX\text{-}AVG}$.

Flank St-BDCL of stalk dot function (St-DF) is to found that a stalk is come about the same direction in the St-CFS activities of a flank sonance. Stalk cognition function (St-CF) of vicinage (VI-ε) condition is to denote stiff a stalk brilliant-differentiation cognition level (St-BDCL) value for the St-CF-VI-ε_{AVG}, St-CF-VI-ε_{AVG} and St-CF-VI-$\varepsilon_{MAX\text{-}AVG}$ (Figure 3). St-CF activities of vicinage St-BDCL is check out on FC direction of St-CFS with small stalk at St-CF-VI-ε_{AVG} and St-CF-VI-ε_{MED} of the stalk dot function (St-DF). Stalk value of St-CF-VI-$\varepsilon_{MAX\text{-}AVG}$ is differently the small to FV direction in St-CFS. St-CF-VI-ε_{AVG} of stalk dot function (St-DF) with vicinage St-BDCL is check out very small St-CF activities at 0.46±0.15. St-CF-VI-ε_{MED} on the FC direction with vicinage St-BDCL is check out very small St-CF activities at 0.43±0.02 unit. St-CF-VI-$\varepsilon_{MAX\text{-}AVG}$ on the FC direction in the St-CFS is check out very little small stalk St-CF activities at 0.16±(-0.02) unit.

5. DISCUSSIONS

Stalk cognition phenomenon

Stalk dot function (St-DF) by convenient St-BDCL is found that a stalk is come about the same direction in the St-CFS activities direction.

Stalk value of St-CF-ST-εMAX-AVG is differently the very small to FV direction in St-CFS.

Vicinage St-BDCL is to found St-CF-VI-εMAX-AVG on the FC direction in the St-CFS that a stalk is come about the same direction in the stalk activities of a vicinage sonance.

6. CONCLUSION

In order to determine sonance cognition suitable for brilliant-differentiation cognition level (BIAL), as spread-out transition technique presented that separately supplies and provides performance to the stalk cognition function used in consideration of various stalk sonance functions (ST-SF). Transition data were acquired from the primary reference at the brilliant-differentiation Level (BIL) by expressing the value of the stalk sonance function (ST-SF) as the cognition rate. Brilliant ductile-dot was selected and performed using the same empirical study of stalk values, and the differential function by stalk cognition level system in spread-out sonance was evaluated using the

performance of the proposed method. The diffusion cognition system will be able to be used as data for basic applications and nanotechnology to analyze surfaces and inhibit functions by differential signals.

REFERENCES

[1] Lindsay, M. B., S. Dawson, Harwell, A., Hopkins, R., Kaufmann, J., M., LeMaster, Matern, P., Katie, M-G., & Devon, Q., (2019). 4.3 Connective Tissue Supports and Protects, Anatomy & Physiology, OpenStax/Oregon State University, retrieved 16 April 2021.

[2] Tissues, F. (21 May 2021). Biology LibreTexts. Retrieved 2 August 2022.

[3] Mathews, M. B. (1975). Connective Tissue, Macromolecular Structure Evolution. Springer-Verlag, Berlin and New York. Link,

[4] Ross, M., & Pawlina, W. (2011). Histology: A Text and Atlas (6th ed.). Lippincott Williams & Wilkins. pp. 158–97. ISBN 978-0781772006.

[5] Young, B., Woodford, P., & O'Dowd, G. (2013). Wheater's Functional Histology: A Text and Colour Atlas (6th ed.). Elsevier, 65. ISBN 978-0702047473

[6] Nayak, S. R., Mishra, J., & Palai, G. (2019) Analysing roughness of surface through subject dimension: A review, Image and Vision Computing, 89, 21–34.

[7] Huiting, J., Flisijn, H., Kokkeler, A.B.J., & Smit., G.J.M. (2013). Exploiting phase measurements of EPC Gen2 RFID structures, IEEE Int Conf RFID-Technol Appl (RFID-TA), 1–6.

[8] Bekkali, A., Zou, S.C., Kadri, A., Crisp, M., & Penty, R.V. (2015) Performance analysis of passive UHF RFID systems under cascaded fading channels and interference effects, IEEE Trans Wirel Commun., 14(3), 1421–33.

[9] DiGiampaolo, E., & Martinelli, F. (2014). Mobile robot localization using the phase of passive UHF RFID signals, IEEE Trans Ind Electron, 61(1), 365–76.

[10] López, Y.Á., Gómez, M.E., & Andrés, F.L.H. (2017). A received signal strength RFID-based indoor location system, Sensors and Actuators A, 255,118–133.

[11] Chawla, K., McFarland, C., Robins, G., & Shope, C. (25–27 June 2013). Real-time RFID localization using RSS, in: 2013 International Conference on Localization and GNSS (ICL-GNSS), Turin (Italy), 1–6.

[12] Kim, J.L., Choi, J.S., & Hwang, K.S. (2017). A Study on Anticipation System of Shudder Distinction by the Physical Shape Alteration in Static Condition, The Journal of IIBC (JIIBC), 17(3), 115-120,. DOI 10.7236/JIIBC.2017.17.3.115

[13] Kim, J.L., & Kim, K.D. (2017). Prediction of shiver differentiation by the form alteration on the stable condition, International Journal of Internet Broadcasting and Communication (IJIBC), 9(4), 8-13. DOI 10.7236/IJIBC.2017.9.4.8

[14] Kim, J.L., & Hwang, K.S. (2015). Study of quake wavelength of dynamic transition with posture, International Journal of Advanced Smart Convergence (IJASC), 4(1), 99-103.

[15] Kim. J.L., & Kim, K.D. (2016). Denoteation of central motion techniques: limpness motion function and limpness sensory unit function, International Journal of Advanced Culture Technology (IJACT), 4(3), 56-61,. DOI 10.17703/IJACT.2016.4.3.56

DOI: https://doi.org/10.15379/ijmst.v10i1.1436