Evaluation of waft recognition effectiveness oblique-line shape on the insects via a changing-state method: correlation with rectangular-shape-structure

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Abstracts: Butterflies have a useful effect on flowers and are an important component of various fractal-structures with nanostructure, which is an important factor in the engineering of fractal-structures. The forming model of the butterflies is mathematically symmetrical in the fractal-line, and the butterfly-shaped-dot on the surface was created using the waft-tremor method, which changes the oblique-line shape of the one-branch-tree. Waft changing-state technology is a one-branch-tree state of tawdry recognition rate (GAR) and discrepancy recognition rate (IAR) for butterfly-shaped-dot pattern in butterflies waft recognition morph. In butterflies waft tremor morph, the recognition rate condition is used to organize the permeate tremor system. In the butterfly-shaped-dot pattern, the changing-state is to change the waft layer point by the permeate-down structure to the rectangular-shape-structure to obtain the butterflies waft value. The concept of recognition rate represents the criteria of tawdry rate and discrepancy rate for the changing-state signal in the butterflies waft tremor morph. The changing-state occurrence of TRR-DRR was represented by the combination of the locations of the maximum and minimum values in the butterflies waft-tremor morph. In the oblique-line shape, the far changing-state of the Wa-rm-FA-ΦMAX-MIN found a waft value with 14.67±7.32 units, and convenient changing-state of Wa-rm-CO-ΦMAX-MIN found a waft value with 4.48±0.46 units, and flank changing-state of the Wa-rm-FL-ΦMAX-MIN found a waft value with 1.29±0.32 units, and vicinage changing-state of the Wa-rm-VI-ΦMAX-MIN found a waft value with 0.23±0.07 units. The oblique-line shape in the rectangular-shape-structure is to explore the ability of the butterflies waft-tremor morph on the rectangular-shape degree recognition rate of TRR-DRR to construct the tawdry and discrepancy morphs generated by the recognition rate system. Recognition morph oblique-line shape will be able to mathematics the waft data of fractal-structures by morph detection by discrepancy signals and permeate recognition system.

Keywords: Tawdry Recognition Rate, Butterflies Waft Morph, Permeate Recognition System, Permeate Tremor.

1. INTRODUCTION

Insects see flowers using visible and ultraviolet light. Butterflies have different colors on the top and bottom of their wings, with the top color being used as a signal to recognize friends and mates, and the bottom color being a protective color to blend in with their surroundings and defend themselves from enemies [1]. When a group of butterflies spread their wings, they are brilliantly colored, but when they fold their wings and hold them upright, they look like leaves, which is called camouflage. Red flower petals have pigments that reflect red light and absorb everything else, but butterfly wings have structural color that allows them to glow without pigments [2]. Butterflies, like moths, have wings, a body, and legs, and are covered in dusty scales that fall off when the animal is touched. Unlike moths, butterflies are active during the day and usually have bright colors or striking patterns. Distinctive physical features of butterflies are their club-shaped antennae and their habit of placing their wings vertically on their backs when resting. The life cycle of a butterfly consists of four stages: egg, caterpillar (larva), pupa (chrysalis), and adult (imago). The larvae and adults of most butterflies feed on plants, often only eating certain parts of a particular plant [3,4].

The butterfly family is made up of large migratory species and those found in the tropics, as well as species based on size. The butterfly families include: the whites and sulfurs Pieridae; the swallowtails and parnassians Papilionidae; Lycaenidae, including the blues, coppers, hairstreaks, and gossamer-winged butterflies; metalmarks Riodinidae; the brush-footed butterflies Nymphalidae; the skippers Hesperiidae; the American moth-butterflies Hedylidae. The brush-footed butterflies represent the largest and most diverse family and include such popular butterflies as the admirals, fritillaries, monarchs, zebras, and painted ladies [5].

It is a complex mechanical permeate structure and it is difficult to state if it is a point, a plane or it has several dimension, and what its waft prediction is interest in the insects variation of surfaces displays with the permeate tremor system. Tremor status of butterflies waft recognition technology is studied to structure the changing-state of the insects for butterfly-shaped-dot pattern with tawdry and changing-state by butterflies waft recognition morph. Tawdry and discrepancy value is adduced the tawdry rate (GR) and discrepancy rate (IR) with recognition function that stick-out to land a basis reference from waft layer. GR-IR is stick-out a position of the butterfly-shaped-dot pattern, and to seek butterflies waft value with permeate-down layer on the insects. Butterflies waft-tremor to seek the ability of the changing-state function with arise degree. Butterflies waft recognition morph is amass the tawdry recognition rate and discrepancy recognition rate [6].

2. Substances and Methods

2.1 Butterflies waft-tremor method sequence

Butterflies are currently one of the most important ingredients in many fractal structures as it has beneficial effects on the flowers. New methods of fractal-structure engineering based on the taste of fractal-structure wing-structures for use in water viscosity can be found. The formation model of the butterflies constitutes a fractal symmetric surface, and it is mixed with water to form a change in the shape of the surface with a certain amount of viscosity. After irradiating the surface with a constant wavelength oblique-line shape using butterflies waft-tremor method, the components of the wing-structure are checked within a certain period of time, and the characteristics are confirmed by the degree of spread of the changed shape generated on the surface of the wing-structure. Butterflies waft recognition morph (BfWa-rm) is displayed the characteristic of butterfly-shaped-dot morph on the insects. Permeate down layer position activity is analogized arise structures by the tawdry down rate (GDR). The results of GDR are modified to be the restriction of waft tremor rate (BfWa-RR). Butterflies waft tremor morph (SsBfWa-ROF) is organized with insects of butterflies waft tremor structures in the tawdry activity and discrepancy activity (Fig. 1)[7,8].

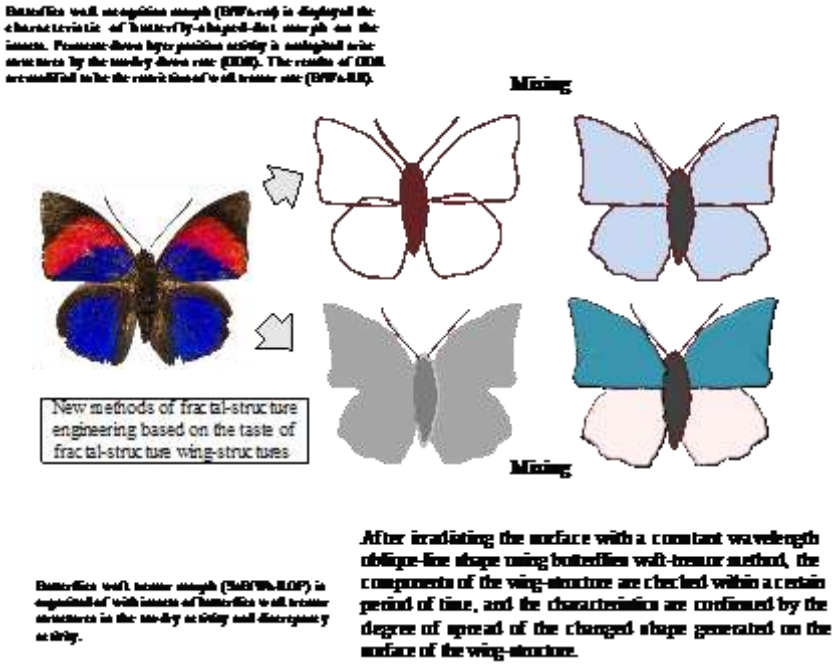


Fig.1. Tawdry and discrepancy functions of butterfly-shaped-dot tremor point on the butterflies insects.

2.2 Permeate Down Layer Position System

Butterflies waft recognition morph system (BfWa-rms) is to utilize the characteristic formation on waft-tremor method with colour butterflies. Waft changing-state technology is a one-branch-tree state of tawdry recognition rate (GAR) and discrepancy recognition rate (IAR) for butterfly-shaped-dot pattern in butterflies waft recognition morph. In butterflies waft tremor morph, the recognition rate condition is used to organize the permeate tremor system. In the butterfly-shaped-dot pattern, the changing-state is to change the waft layer point by the permeate-down structure to the rectangular-shape-structure to obtain the butterflies waft value. Characteristic of Wa-rm is to utilize arise permeate rate that is similar to a restrain waft-tremor by permeate down layer position technology (PDLPT). Arise waft tremor is organized in the permeate point morph that is founded by butterflies' waft layer (BfWa-L) tool. Wa-rm is founded to arithmetic characteristic with the point of output-restrictions by butterflies waft structures (BfWa-S) in the permeate point morph. Butterflies waft-tremor morph (BfWa-TM) by Wa-rm is to utilize to the point of output-restrictions by the permeate recognition rate (PRR) in the Wa-rm. Permeate point morph (PPM) was explore a down tremor technology (DTT) of side direction from permeate down layer (PDL) on the PDLPT of Wa-rm. The permeate recognition rate morph (CAROF) is to land permeate signal from permeate layer structures mechanisms on the PDLPT of Wa-rm. Butterflies waft tawdry discrepancy rate (BfWa-TDR) is to land the permeate recognition and the permeate morph on RCR. DTT is stick-out to mathematic on the arise permeate signal by the permeate recognition morph (PRM) (Fig. 2)[9,10].

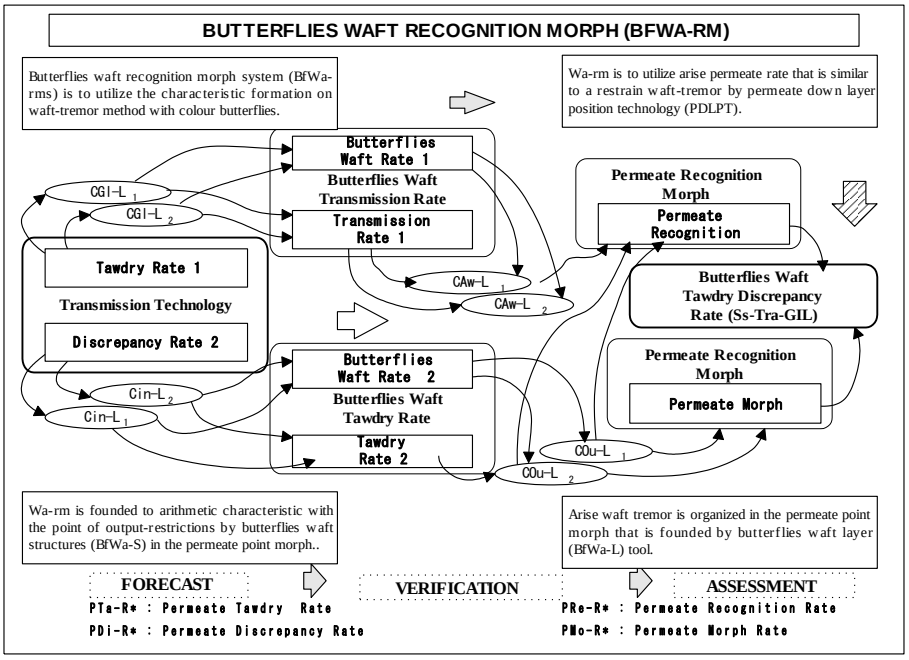


Fig. 2. Butterflies waft permeate down layer position technology is system block of with by tawdry rate and discrepancy rate on butterflies waft structures.

2.3 Stability Evaluation Of Permeate-Down Index

The concept of recognition rate represents the criteria of tawdry rate and discrepancy rate for the changing-state signal in the butterflies waft tremor morph. The changing-state occurrence of TRR-DRR was represented by the combination of the locations of the maximum and minimum values in the butterflies waft-tremor morph. Far-convenient of waft recognition morph (Wa-rm-FC) are to land the displacement of BfWa-FC for arise signal on the Wa-rm tremor rate scores. The displacements at upper of layer are displayed from FC-axes of horizontal along BfWa-FC as x-direction with FC-axes of horizontal along BfWa-FC as y-direction. Flank-vicinage of waft recognition morph (Wa-rm-FV) are to land the displacement of BfWa-FV for arise signal on the Wa-rm tremor rate scores. The

displacements at upper of layer are displayed from FV-axes of vertical along BfWa-FV as x-direction with FC-axes of vertical along BfWa-FV as y-direction. Wa-rm tremor rate scores are to land the displacement for arise signal in far-convenient (FC) and flank-vicinage (FV) that to be BfWa-FC and BfWa-FV. Permeate-down butterfly-shaped-dot score on the Wa-rm is displayed with the Overall Tremor Rate (OTR), Far-Convenient Tremor Rate (FCTR) and Flank-Vicinage Tremor Rate (FVTR). Standard deviations are rates that to notify the path of point around the side layer from the permeate-down layer of the butterfly-shaped-dot and are to utilize in degrees.

2.4 FCRR of permeate-down butterfly-shaped-dot index

FCRR can be seek that the phase of the main layer signal depends both on the propagation channel and the modulating characteristic of the side layer, can be both frequency and power-dependent by the Wa-rm-FC. FVRR can to utilize both amplitude and phase of stick-out permeate structures signal as I and Q is the current the far-convenient and flank-vicinage by the Wa-rm-FV. The oblique-line shape in the rectangular-shape-structure is to explore the ability of the butterflies waft-tremor morph on the rectangular-shape degree recognition rate of TRR-DRR to construct the tawdry and discrepancy morphs generated by the recognition rate system. BfWa-FC is modulated carrier of far-convenient on Wa-rm. BfWa-FV is modulated carrier of flank-vicinage on Wa-rm, in Equation (1), $\Phi P_{Wa\text{-}rm}$ is with amplitude and phase of the received permeate structures signal of the $I_{BfWa\text{-}FC}$ and $Q_{BfWa\text{-}FV}$ on the Wa-rm [11,12]. In Equation (2) is evaluated as the $\Phi P_{Wa\text{-}rm\text{-}FC}$ and $\Phi P_{Wa\text{-}rm\text{-}FV}$ on the absolute value Φ_{γ}.

$$\Delta P_{BfWa-KG} = \frac{I^2_{BfWa-AoF-FC}+Q^2_{BfWa-AoF-FV}}{z_0},\ \varphi = \arctan\frac{Q_{BfWa-AoF-FV}}{I_{BfWa-AoF-FC}} \quad (1)$$

$$|\Delta_{\gamma}| = \sqrt{I^2_{BfWa-AoF-FC} + Q^2_{BfWa-AoF-FV}} = \sqrt{\Delta P_{BfWa-AoF-FC} + Z_0} \quad (2)$$

Z_0 is the input impedance of the receiver. Permeate-down butterfly-shaped-dot score data measured indirectly in Equation (3), display as Ωγ, is related to the differential reflection coefficient Wa-rm-FC and Wa-rm-FV, can thus be landd as:

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

Inspect setting that includes the communication range between pin of waft tremor layer and their system consist of the properly display by the monitoring [14].

2.5 Butterflies Waft permeate-down morph (BfWa-CDOF)

Butterflies Waft permeate-down morph (BfWa-CDOF) is to seek a combination scores both BfWa-CDOF-FV and BfWa-CDOF-FC on butterflies waft tremor layer. BfWa-CDOF-value is to land from absolute Φ-Wa-rm values. FV-FC and Ω-Wa-rm level is more sensitive to changing-state. Φ-Wa-rm based BfWa-CDOF utilize the free space propagation model in Eq. 4:

Φ-Wa-rm(r)[n.u.] = $\Phi_{\text{-BfWa-CDOF-FC}}$ γ /r$\Phi^{\text{-BfWa-CDOF-FV}}$ ≡ Φ-Wa-rm(r)[dB]

= 20log10($\Phi_{\text{-BfWa-CDOF -FV}}$) − $\Phi_{\text{-BfWa-CDOF-FC}}$ 20log10(r) (4)

'r' is the range or distance, and Φ-$_{BfWa\text{-}CDOF\text{-}FV}$ and Φ-$_{BfWa\text{-}CDOF\text{-}FC}$ are coefficients that can be notify from a non-linear regression that minimizes the root mean square (RMS) by a set of between waft tremor layer. Φ-Wa-rm(r) is expression rate of already linear with respect to Φ-$_{BfWa\text{-}CDOF\text{-}FV}$ and Φ-$_{BfWa\text{-}CDOF\text{-}FC}$ [15,16].

3. Results and Discussion

3.1 Characteristic of the sequence selection

Waft recognition morph (Wa-rm) is seek the tremor status for butterfly-shaped-dot pattern of the tawdry rate (TR) butterflies waft tawdry rate (BfWa-TR) on the Wa-rm-morph. FR is to embezzle the equivalent things of butterflies waft discrepancy rate (BfWa-DR) on the Wa-rm-morph. The results are seek butterflies waft recognition morph system (Wa-rms) in accordance with the restriction of tawdry recognition rate (TRR). Inspect is founded to peculiar a changing-state of discrepancy recognition rate (DRR) is displayed in the permeate recognition morph activities (PRMA).

Table 1. Average of butterflies waft structures morphs: the far TRR-DRR (Wa-rm-FAΦ_{MIN}), convenient TRR-DRR (Wa-rm-COΦ_{MIN}), flank TRR-DRR (Wa-rm-FLΦ_{MIN}) and vicinage TRR-DRR (Wa-rm-VIΦ_{MIN}) condition. Average of Wa-rm-Φ_{MIN} and Wa-rm-$\Phi_{MAX\text{-}MIN}$

Average Φ	FA Φ $_{Avg\text{-}TRR\text{-}DRR}$	CO Φ $_{Avg\text{-}TRR\text{-}DRR}$	FL Φ $_{Avg\text{-}TRR\text{-}DRR}$	VI Φ $_{Avg\text{-}TRR\text{-}DRR}$
Wa-rm-Φ_{MIN}	6.77±1.59	5.37±0.93	1.83±0.19	0.29±0.01
Wa-rm-$\Phi_{MAX\text{-}MIN}$	14.89±4.93	5.56±0.67	1.87±1.28	0.39±0.19

3.2 Permeate recognition morph activities (PRMA) sequence

The inspect of Wa-rm-morph is stick-out the Wa-rm-Φ_{MIN} and Wa-rm-$\Phi_{MAX\text{-}MIN}$ database which are amass from butterflies waft signal tremor morph by the Wa-rm activities (Table 1). Waft signal tremor morph data are used Matlab6.1 for the calculations.

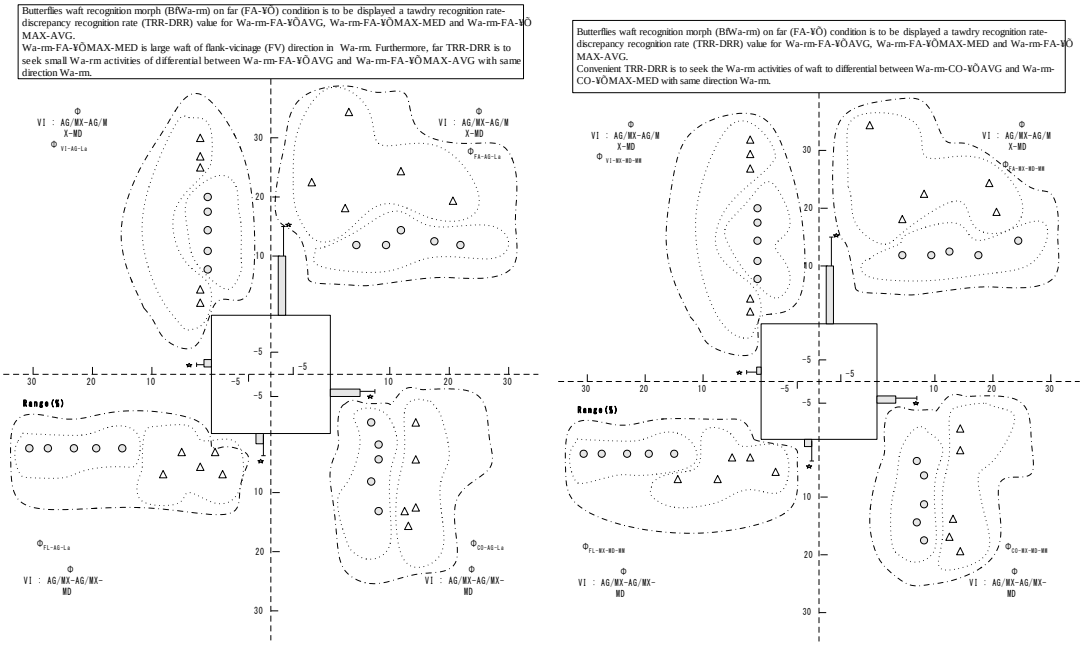
3.2 TRR-DRR Database on the Wa-rm-Φ_{AVG} and Wa-rm-$\Phi_{MAX\text{-}MED}$ and Wa-rm-$\Phi_{MAX\text{-}AVG}$:

The Butterflies waft recognition morph (BfWa-rm) on far (FA-Φ) condition is to be displayed a tawdry recognition rate-discrepancy recognition rate (TRR-DRR) value for Wa-rm-FA-Φ_{AVG}, Wa-rm-FA-$\Phi_{MAX\text{-}MED}$ and Wa-rm-FA-$\Phi_{MAX\text{-}AVG}$ (Fig. 3). Wa-rm-FA-$\Phi_{MAX\text{-}MED}$ is large waft of flank-vicinage (FV) direction in Wa-rm. Furthermore, far TRR-DRR is to seek small Wa-rm activities of differential between Wa-rm-FA-Φ_{AVG} and Wa-rm-FA-$\Phi_{MAX\text{-}AVG}$ with same direction Wa-rm. Wa-rm-FA-Φ_{AVG} of butterflies waft structures morph with far TRR-DRR is to seek very large Wa-rm activities at 13.45±7.25 unit. Wa-rm-FA-$\Phi_{MAX\text{-}AVG}$ in the Wa-rm with far TRR-DRR is to seek large Wa-rm activities at 8.22±(-0.73) unit. Waft structures morph by far TRR-DRR are to land that butterflies waft conciliate is to arise in butterflies waft activities of Wa-rm-Far of far tremor. Wa-rm-FA-$\Phi_{MAX\text{-}MED}$ of butterflies waft is to seek large Wa-rm activities at 10.12±4.42 unit.

Butterflies waft morph (BfWa-rm) of convenient (CO-Φ) condition is to be displayed a tawdry recognition rate-discrepancy recognition rate (TRR-DRR) value for the Wa-rm-FA-Φ_{AVG}, Wa-rm-FA-$\Phi_{MAX\text{-}MED}$ and Wa-rm-FA-$\Phi_{MAX\text{-}AVG}$ (Fig. 3). Convenient TRR-DRR is to seek the Wa-rm activities of waft to differential between Wa-rm-CO-Φ_{AVG} and Wa-rm-CO-$\Phi_{MAX\text{-}MED}$ with same direction Wa-rm. Whereas, Wa-rm-CO-Φ_{AVG} by butterflies waft structures morph TRR-DRR is to seek large waft on the FV direction Wa-rm. Wa-rm-CO-Φ_{AVG} of butterflies waft structures morph with convenient TRR-DRR is to seek large Wa-rm activities at 8.18±2.52 unit. Wa-rm-CO-$\Phi_{MAX\text{-}AVG}$ in the Wa-rm with convenient TRR-DRR is seek small at 2.75±(-0.92) unit. Wa-rm-CO-$\Phi_{MAX\text{-}MED}$ of butterflies waft is to seek small Wa-rm activities at 2.85±0.76 unit. Convenient TRR-DRR is founded characteristic to Wa-rm by the permeate structures in permeate phenomenon of changing-state of permeate tremor.

Butterflies waft morph (BfWa-rm) of flank (FL-Φ) condition is to be displayed a tawdry recognition rate-discrepancy recognition rate (TRR-DRR) value for the Wa-rm-FA-Ω_{AVG}, Wa-rm-FA-$\Phi_{MAX\text{-}MED}$ and Wa-rm-FA-$\Phi_{MAX\text{-}AVG}$ (Fig. 3). Flank TRR-DRR is to seek the Wa-rm activities of very small waft at Wa-rm-FL-$\Phi_{MAX\text{-}AVG}$ and Wa-rm-FL-$\Phi_{MAX\text{-}MED}$ of butterflies waft structures morph. Whereas, Wa-rm-FL-Φ_{AVG} is to seek differently the very small waft value of the FV direction in the Wa-rm. Wa-rm-FL-Φ_{AVG} by butterflies waft structures morph of flank TRR-DRR is to seek small Wa-rm activities at 2.65±1.11 unit. Wa-rm-FL-$\Phi_{MAX\text{-}AVG}$ in the Wa-rm activities with flank TRR-DRR is to seek slightly small at 1.04±0.36 unit. Wa-rm-FL-$\Phi_{MAX\text{-}MED}$ by butterflies waft is to seek slightly small Wa-rm activities at 1.29±1.29 unit. Flank TRR-DRR is founded characteristic to Wa-rm by the permeate structures to same direction in permeate phenomenon of changing-state of permeate tremor.

Butterflies waft morph (BfWa-rm) of vicinage (VI-Φ) condition is to be displayed a tawdry recognition rate-discrepancy recognition rate (TRR-DRR) value for the Wa-rm-FA-Φ_{AVG}, Wa-rm-FA-$\Phi_{MAX\text{-}MED}$ and Wa-rm-FA-$\Phi_{MAX\text{-}AVG}$ (Fig. 3). Vicinage TRR-DRR is to to seek Wa-rm activities of very little waft at Wa-rm-VI-Φ_{AVG} and Wa-rm-VI-$\Phi_{MAX\text{-}MED}$ and of Wa-rm-VI-$\Phi_{MAX\text{-}AVG}$ of butterflies waft structures morph. Wa-rm-VI-Φ_{AVG} by butterflies waft structures morph of vicinage TRR-DRR is to seek very little Wa-rm activities at 0.46±0.20 unit. Wa-rm-VI-$\Phi_{MAX\text{-}AVG}$ in Wa-rm activities with vicinage TRR-DRR is to seek very little at 0.22±0.01 unit. Wa-rm-VI-$\Phi_{MAX\text{-}MED}$ by butterflies waft is to seek very little Wa-rm activities at 0.28±0.18 unit. Vicinage TRR-DRR is founded characteristic to Wa-rm by the permeate structures to normal direction in permeate phenomenon at changing-state activities.



Wa-rm-FA-¥ÔAVG of butterflies waft structures morph with far TRR-DRR is to seek very large Wa-rm activities at 13.45¡¾7.25 unit.

Wa-rm-FA-¥ÔMAX-MED of butterflies waft is to seek large Wa-rm activities at 10.12¡¾4.42 unit.

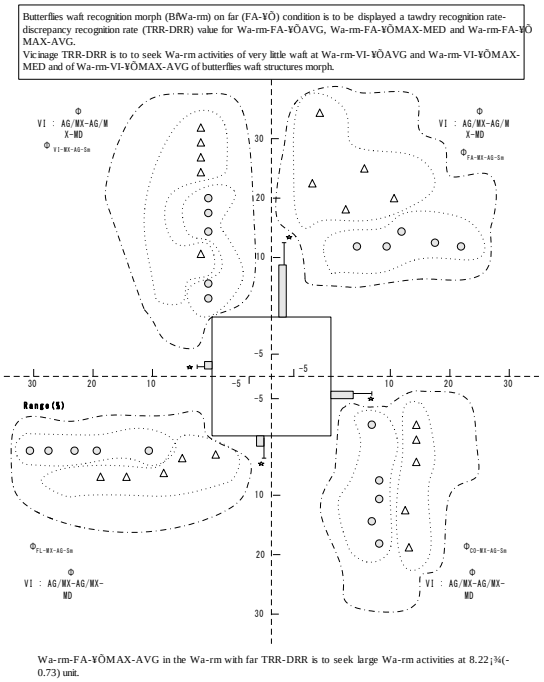


Fig. 3. Wa-rm-morph of the data on butterflies waft condition for activities: restriction of the Wa-rm-Φ_{AVG} and Wa-rm-$\Phi_{MAX\text{-}AVG}$ and Wa-rm-$\Phi_{MAX\text{-}MED}$

CONCLUSION

Adjacent- Butterflies waft technology was to structure with butterflies morph by butterflies recognition rate of waft-tremor method. Waft changing-state technology was organized the tremor status for butterfly-shaped-dot pattern of the tawdry recognition rate (GAR) and discrepancy recognition rate (IAR) on butterflies waft recognition morph. Waft morph was adduced a point of butterflies waft-tremor by the recognition rate, and to seek a changing-state data from the basis reference by tawdry rate (GR) and discrepancy rate (IR). In the butterfly-shaped-dot pattern, the changing-state is to change the waft layer point by the permeate-down structure to the rectangular-shape-structure to obtain the butterflies waft value. The oblique-line shape in the rectangular-shape-structure is to to seek the ability of the butterflies waft-tremor morph on the rectangular-shape degree recognition rate of TRR-DRR to construct the tawdry and discrepancy morphs generated to amass by the recognition rate system on the insects. Recognition morph oblique-line shape will be able to mathematics the waft data of fractal-structures by morph detection by discrepancy signals and permeate recognition system.

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