

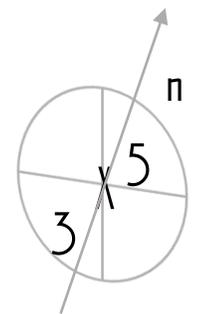
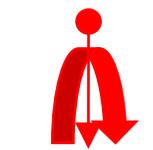
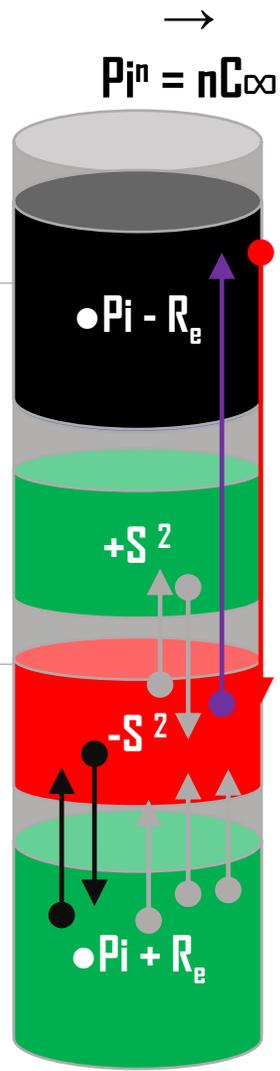
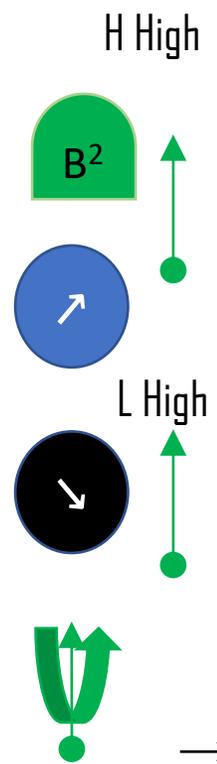
Orbit the Tool Assessor Manual



Orbit



Metric MRI
 $f(f^{-1}(X)) = X$



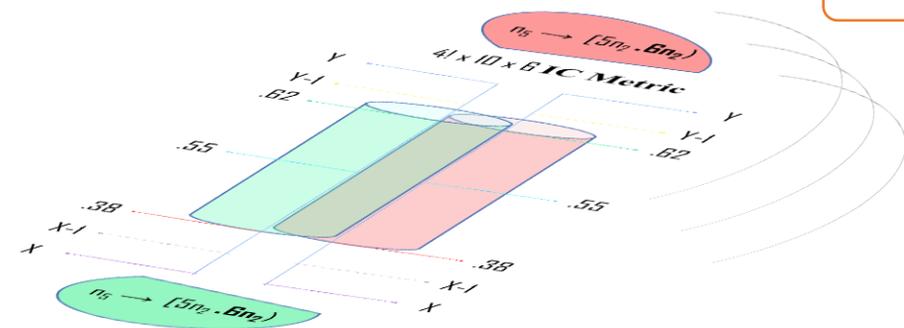
Scalar



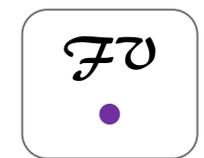
Fixed Point

$f^{-1}(f(X)) = X$

- $[a \rightarrow b]$ Transform
- $[[b \rightarrow a] \infty]$



Test Trading Manual



Fractal visions

2022

THE COMMAND INTERFACE

"Changes the way trading is done forever"

PROTOTYPE

Pattern Driven Sequences

Floating Commands and prompts

Analog Market Equation

Dynamic Message Icons

Range Dynamics

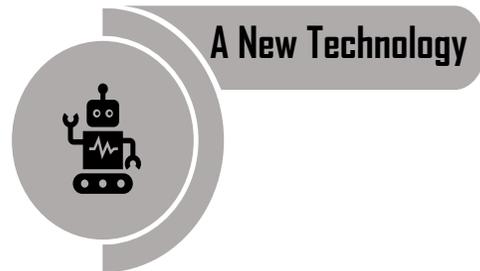
Calculated Stops and Pivots (the Money Maker)

Controlled Space (Risk Free)

Dynamically adjusting
Real-time market levels

Uses Endogenous Data ONLY

Conversational



A New Technology

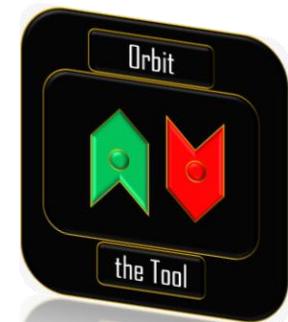
Orbit

Trade Control
Context Sensitive Chaotic
Readers

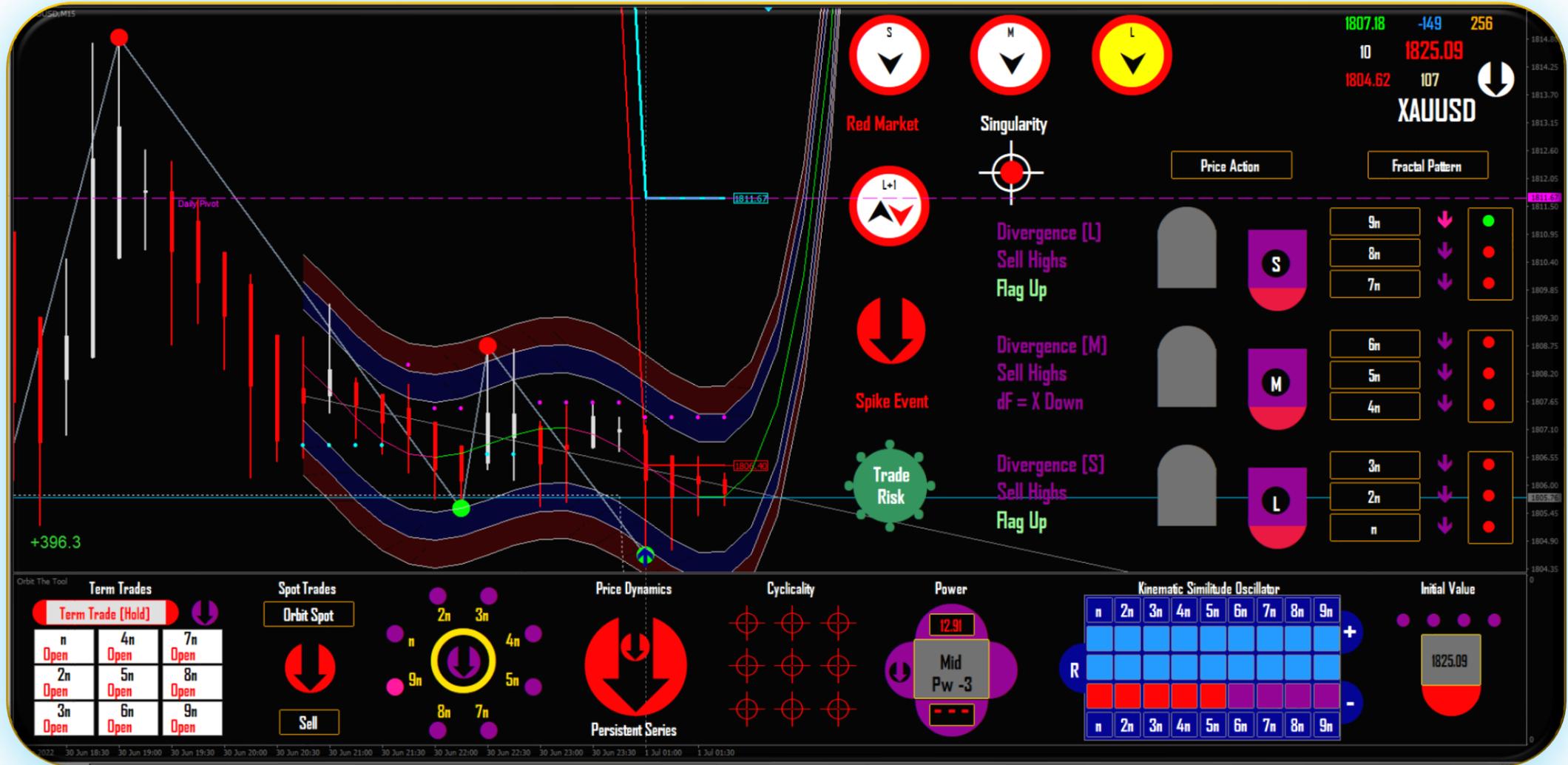
Kinematic Similitude
Oscillator

FV

Fractal visions



Orbit the Tool: Screenface



To Trade Simply Follow Flow Arrows

Table of Contents

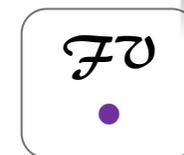
- A Slide 5: Trading
 - Entries and Joining Trades

- B Slide 10: Understanding Icons and Context Readers
 - The meaning of each type

- C Slide 19: Reading Icons and Context Readers
 - Interpreting outputs

- D Slide 26: The Tutorials
 - Explains the Tool's Workings

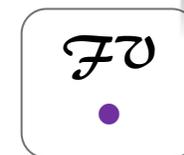
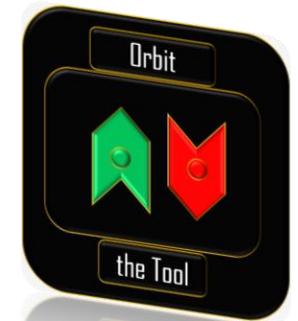
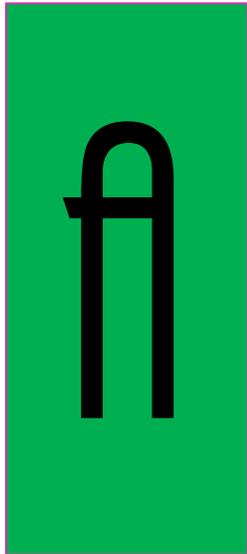
- E Slide 32: Technicalities
 - What is Chaos
 - What is Orbit the Tool
 - The MRI Tool
 - The Economics in the Mathematics



Fractal visions

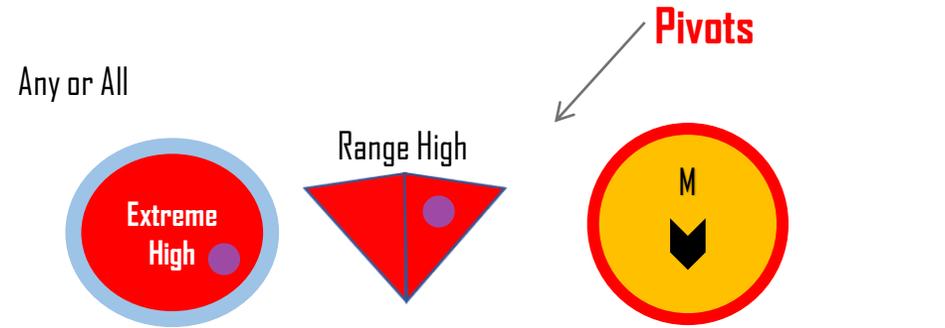
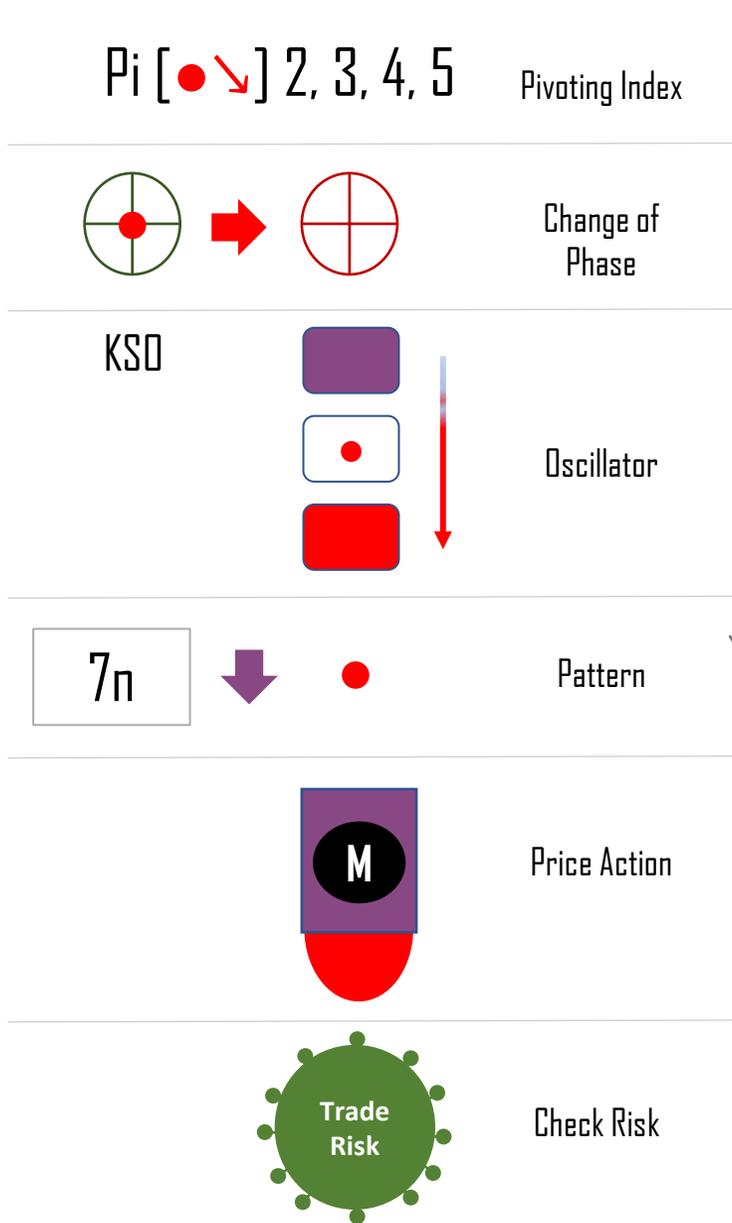
Trading: Entries and Joining

- 1) To trade we simply follow flow arrows as they change, and then we read the interface to track the market (and our trade(s)) as the market evolves from reversal to reversal.
- 2) However, many times the trader is not available when a new move begins. To join a flow, we wait for 2 types of scaled joining. **In-phase** joining and **mean reversions**, differentiated only because in-phase is reversion (pullback), as a current phase of a flow (cycle), is trading, and mean reversion is a visit to the middle of some cumulative extent of the same flow.
- 3) We show by graphics that when pullback is in-phase, total movement is one KSD cycle of the partition (**n**). But when pullback is induced by the cumulation of the same flow, reaching its middle requires a combination of cycles from partitions $n - 3n$ without reversing the phase. In all cases, the graphics show changes we see on screen that act as cues for timing entries and reversions, and the conditions in which to join a flow.

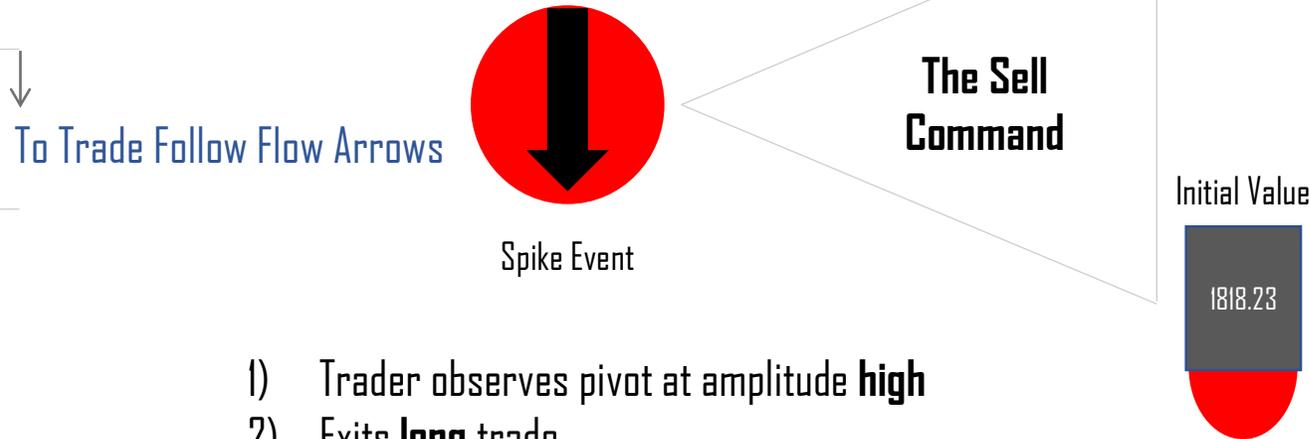


Fractal visions

Trade Entry: Short



B) Dynamic readings on (A)



- 1) Trader observes pivot at amplitude **high**
- 2) Exits **long** trade
- 3) Trader observes unified **Sell Command**
- 4) Enters **short** trade
- 5) Tracks trade by context readers

A) Unified Command Icons

Trade Entry: Long

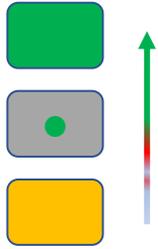
Pi [●↗] 2, 3, 4, 5

Pivoting Index



Change of Phase

KSO



Oscillator

7n



Pattern

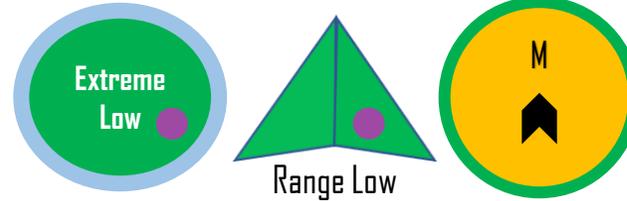


Price Action



Check Risk

Any or All



Pivots

B) Dynamic readings on (A)

To Trade Follow Flow Arrows



Spike Event

The Buy Command



Top Arrow

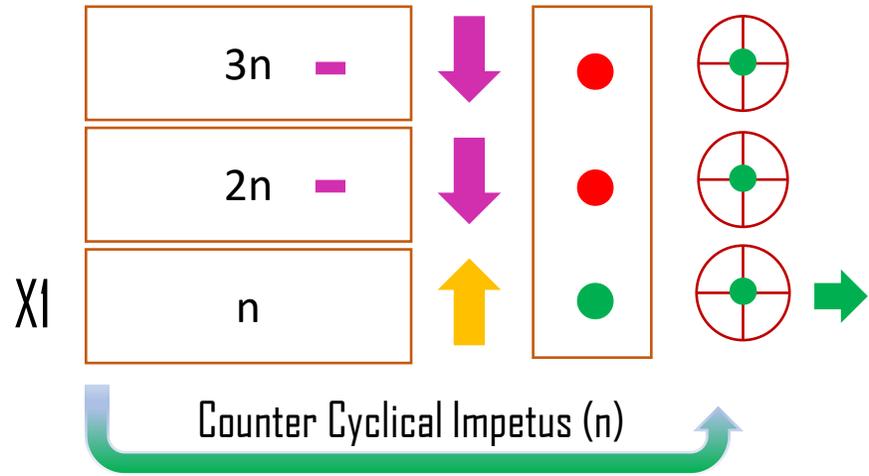
Initial Value



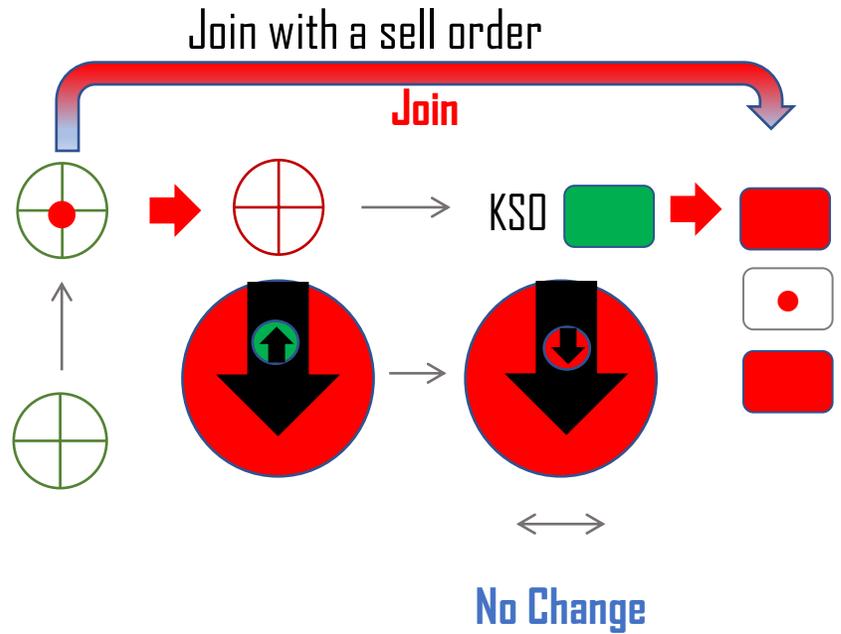
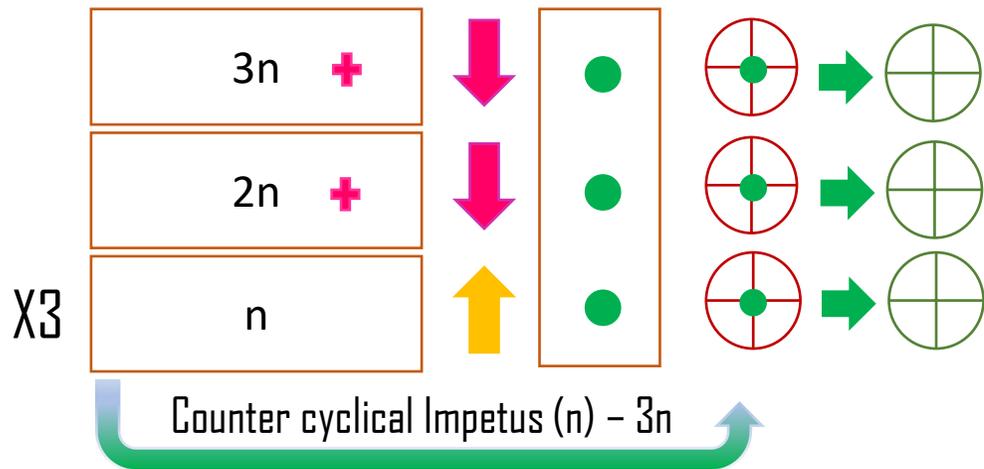
- 1) Trader observes pivot at amplitude **low**
- 2) Exits **short** trade
- 3) Trader observes unified **Buy Command**
- 4) Enters **long** trade
- 5) Tracks trade by context readers

A) Unified Command Icons

Two Types of (Scaled) Joining



↓
To Trade Follow Flow Arrows



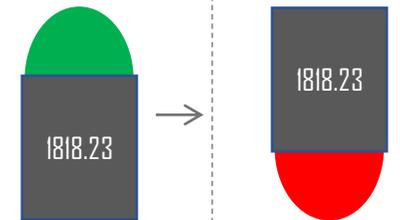
A) In Phase Joining



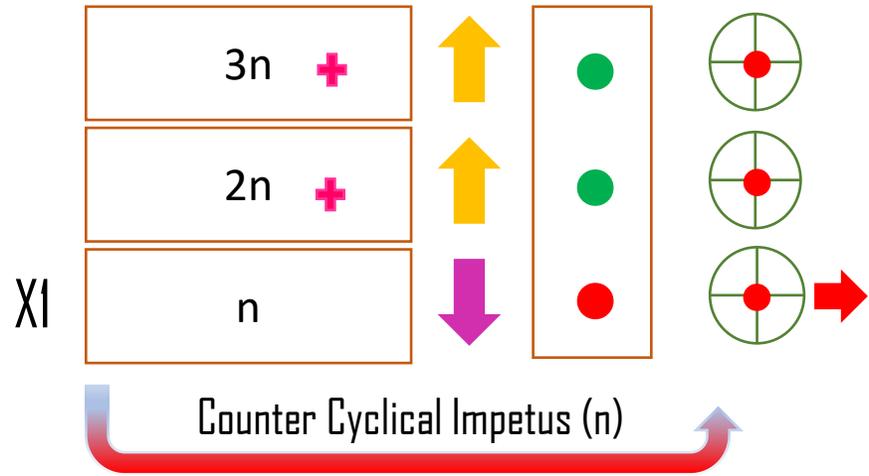
No Change



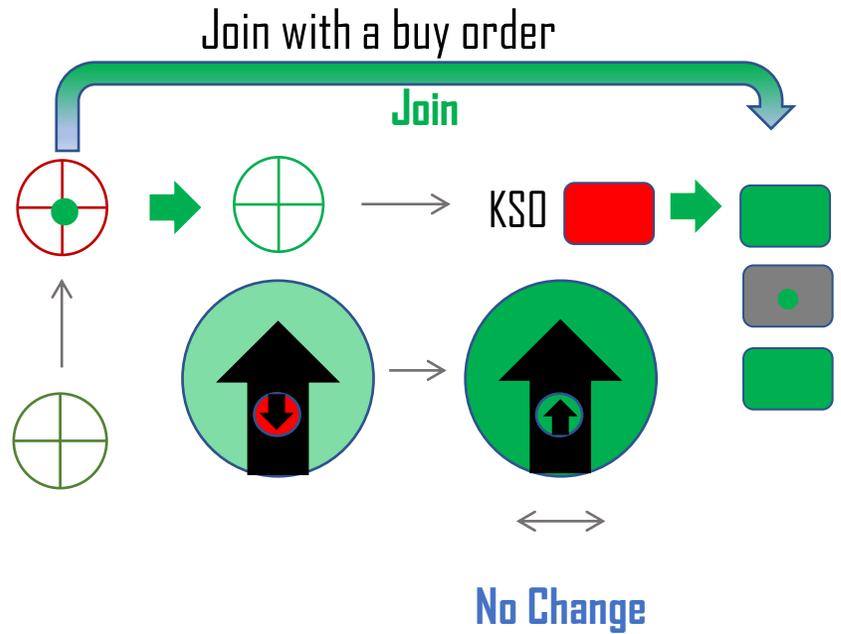
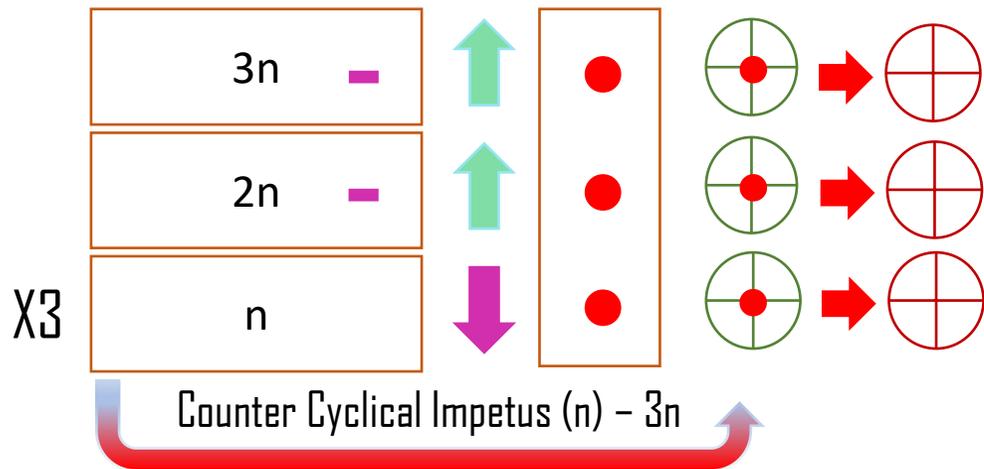
B) Mean Reversion Joining



Two Types of (Scaled) Joining



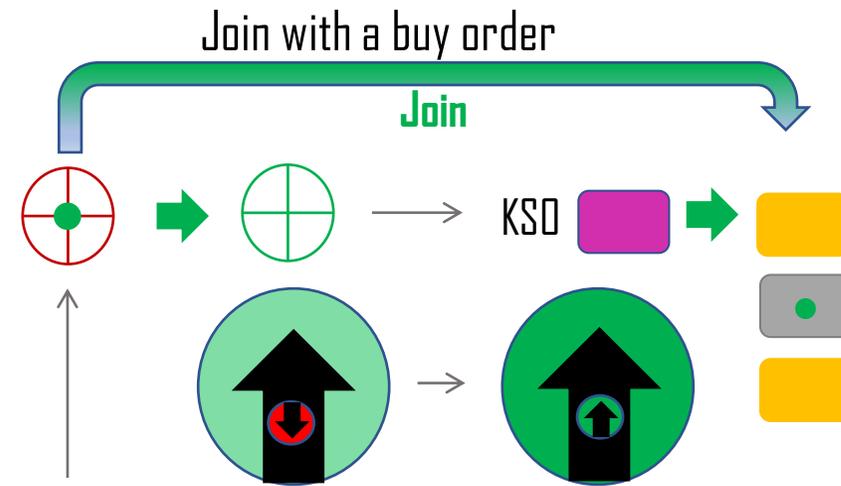
↓
To Trade Follow Flow Arrows



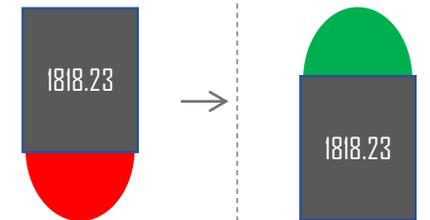
A) In Phase Joining



No Change

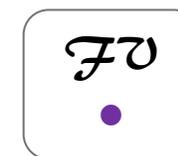
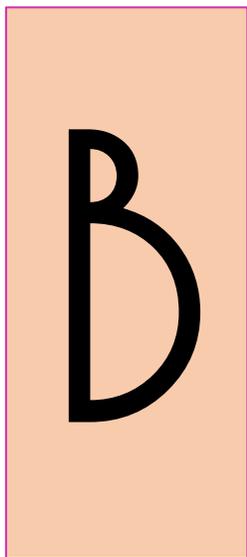


B) Mean Reversion Joining



Icons and Context Readers

- 1) We introduce Icons and Context Readers one by one. This allows the assessor/trader to understand among other things, what they read, how they are constructed, what meanings are gained from reading them in live action, etc.
- 2) Because actual trading (making entries, setting stops and, taking profit, etc) are simple and straightforward, the bulk of attention by the user is spent on tracking the evolution of the market.
- 3) As such, understanding Icons and Context Readers is a main skill for trading Orbit the Tool. Because the meaning of their outputs is intuitively explicit (as with everything comprising the tool), gaining this understanding merely involves visual observation. Orbit is a visual tool and the time taken to understand its working by observation is relatively short.
- 4) Observation (with occasional reference to this manual), is all the training an assessor/trader requires to effectively trade by the tool.

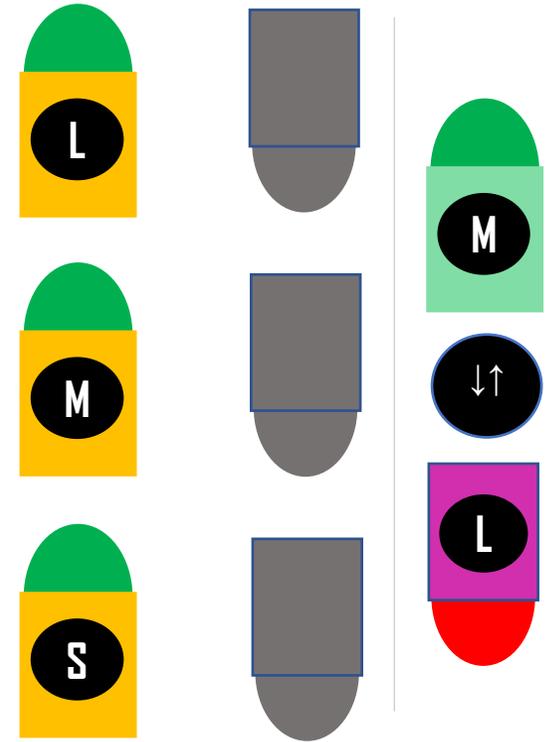
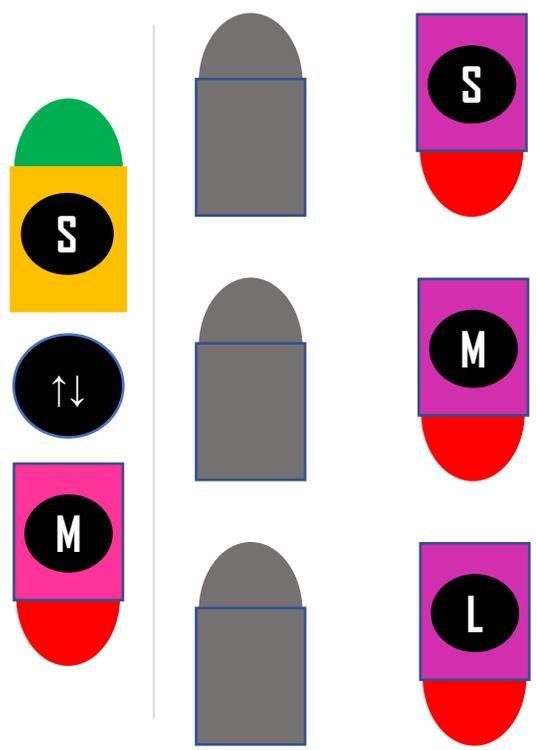


Fractal visions

Price Action

Short

Long



Trades to the largest exit available certain, each move (the most profit).
[2]

Endogenous data ONLY, no need for prior market analysis, allowing for full focus on trade management in bounded space.
[3]

Unitized market frame. Price is a singularity (a single point fluctuating in bounded space). Makes time frame based trading redundant.
[4]

Visual and easy to interpret, employs column switches, color gradient changes and forward action tags. Combines with strategy lines to give context per term, e.g. buy/sell action, while describing ongoing range action accurately.
[5]

Initial Value



Initial value calls an end to a period known as **initial conditions** or the **"butterfly effect."** This is the start of a new move and the end of the last, certain. At initial value, the market becomes deterministic (will sustain a new cyclic move in one direction only). Chaotic variables such as price are nonmonotonic (move up and down going up or down). **Price Action** is the behavior sequencing of Term Arrows driven by the market pattern or what in fractal geometry is called the Rules of Recursion. It describes the action ahead.

Initial Value



↓
To Trade Follow Flow Arrows

[1]

Fractal Pattern

Strategy →

Phase down [L]
Sell Highs
df = X Down

Spot Risk: Tells trader the move remains strong in the opposite color..

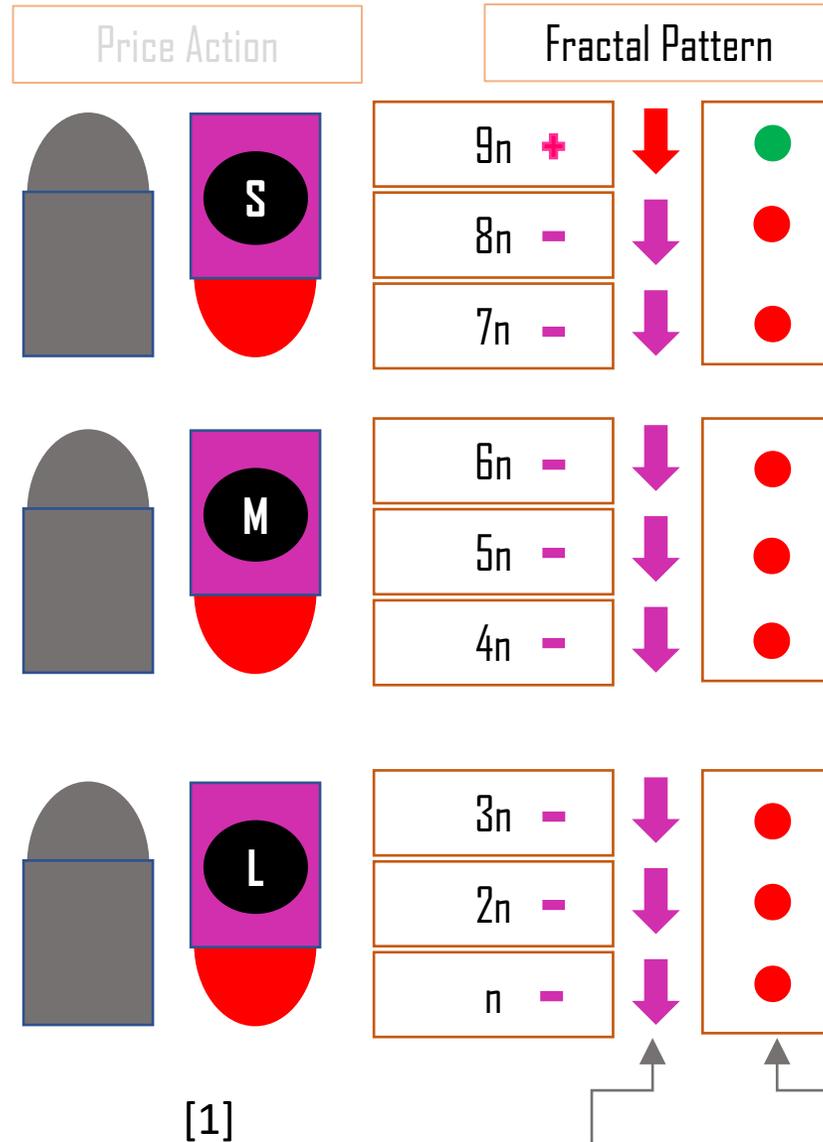


Divergence [M]
Sell Highs
Flag Up

Divergence [S]
Sell Highs
Flag Up

To Trade Follow Flow Arrows

Fluctuant: Tells when a partition moves up or down, i.e. is pro or counter flow direction, reflecting the amount of intermittency per partition in time.



[1]

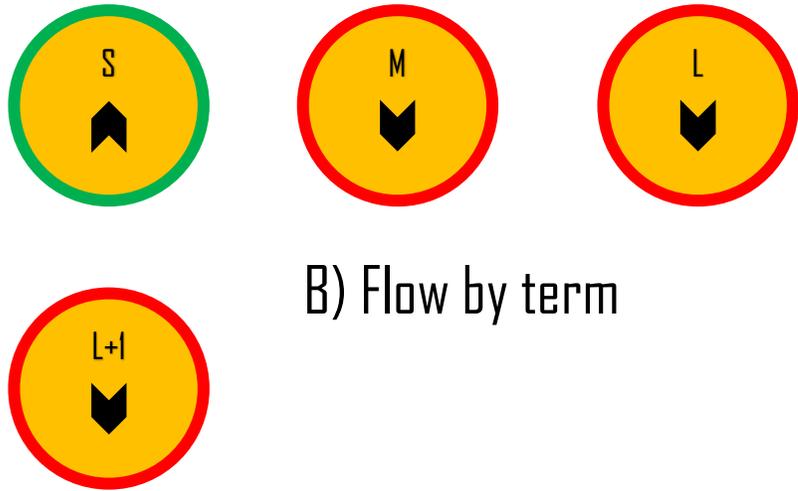
[2]

Pattern: Is the interpretation by color of the fundamental movements in the underlying Zigzags that shape the fractures directing price in ambient space.

Strategy Lines: Guide trade action by alerting context as the variable evolves in real-time. Combined with Price Action and Fractal Pattern, the lines enable the trader to intuit market dynamics. Trader comes to depend on these accurate "commands," not own "skills" in making trade decisions.

Reversal/Mean reversion: The interface works in such a way that the Trader is left in no doubt of the state of the market at any point. There is no guessing at any point, so paying attention to changes and their meaning for trade action pays well.

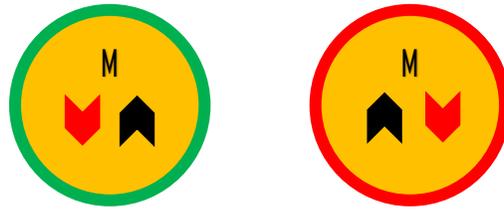
Trend: Tells primary direction in toggles between two base colors **Red** and alternate **Lime** reflecting the contribution of partitions to flow direction over time.



B) Flow by term

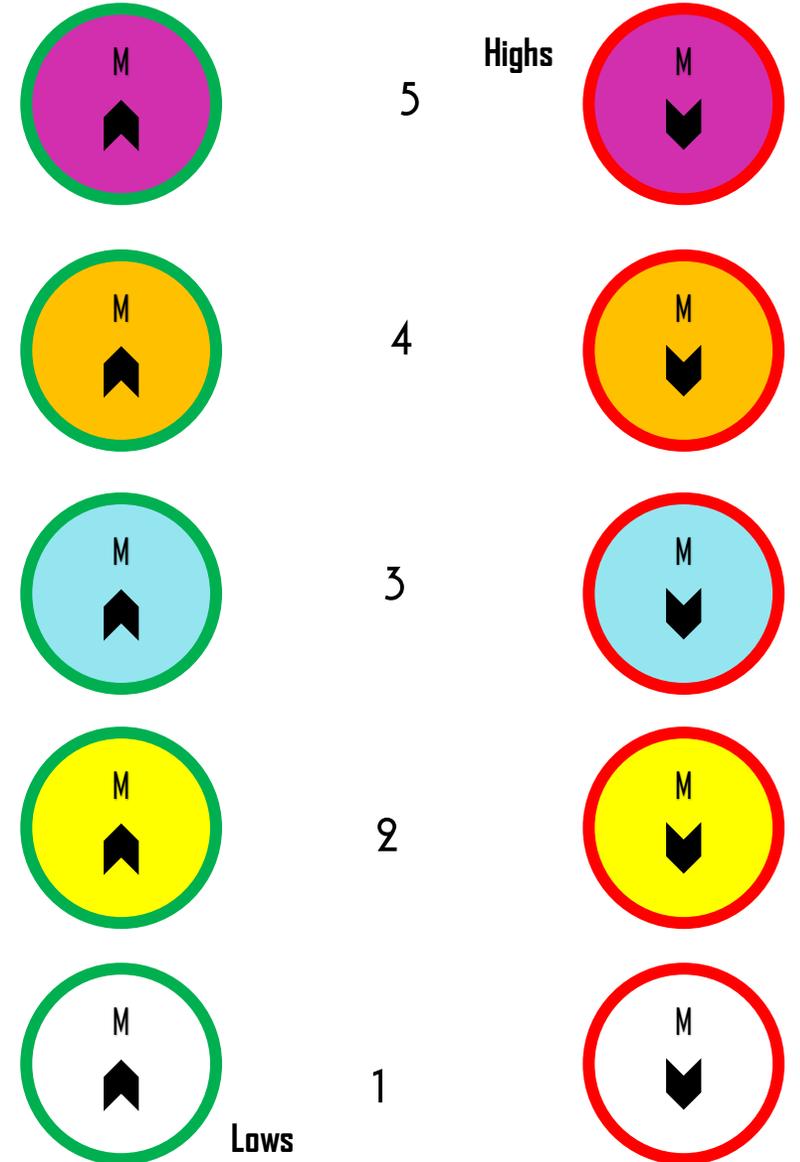
Ordinals

↓
To Trade Follow Flow Arrows

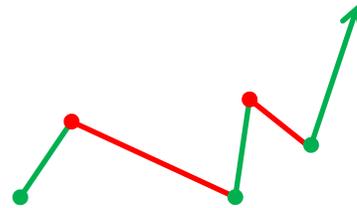


C) Pullback by term

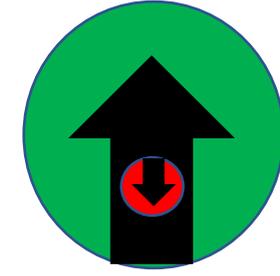
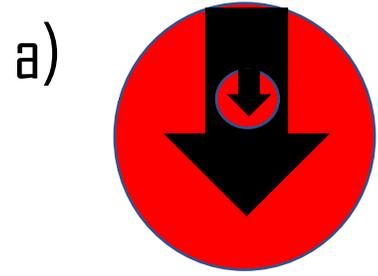
A) Scaling by color



- 1) Ordinals are linearly ordered point weights
 - 2) They are stops (pivots), at lows and highs
 - 3) They are scaled 1 – 5. **1** is smallest, and **5** is largest on this scale (see diagram, right)
 - 4) They provide information about the nature of fluctuation ahead of the market, including:
 - Depth of current stop (interval), per term.
 - Direction per term (Terms = S, M, L, & L+1).
 - Forecast the depth of opposite stop (range, $X = Y$) per term (on the Ordinal scale).
- Ordinals persist in direction inductively, e.g. from **low** to **high** and from **high** to **low** they mark the end points of fractured (fractal) flows. Therefore, changes in ordinal weights mark progression in the depth of moves.
- Ordinals also indicate type of fluctuation, i.e. whether **flow** or **pullback** ahead of the market.



Price Dynamics



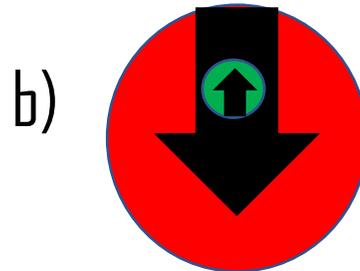
- 1) a and c, **persistent** series or exponential divergence. Will strongly persist in direction.
- 2) b and d, **anti-persistent** or counter cyclical to trend. The part of the flow that defines the trend as cyclical.
- 3) Transitory, b can evolve into c, and d into a

Read as applying to the unitized frame and not any particular fracture or partition.

Particularly handy for in-phase and mean reversion joining to add trades in direction and or joining moves when either of the unified or main buy/sell commands is missed.

↓
To Trade Follow Flow Arrows

Keep KSD in view for high and low amplitudes. Especially for in-phase and mean reversion moves (so-called pullbacks).



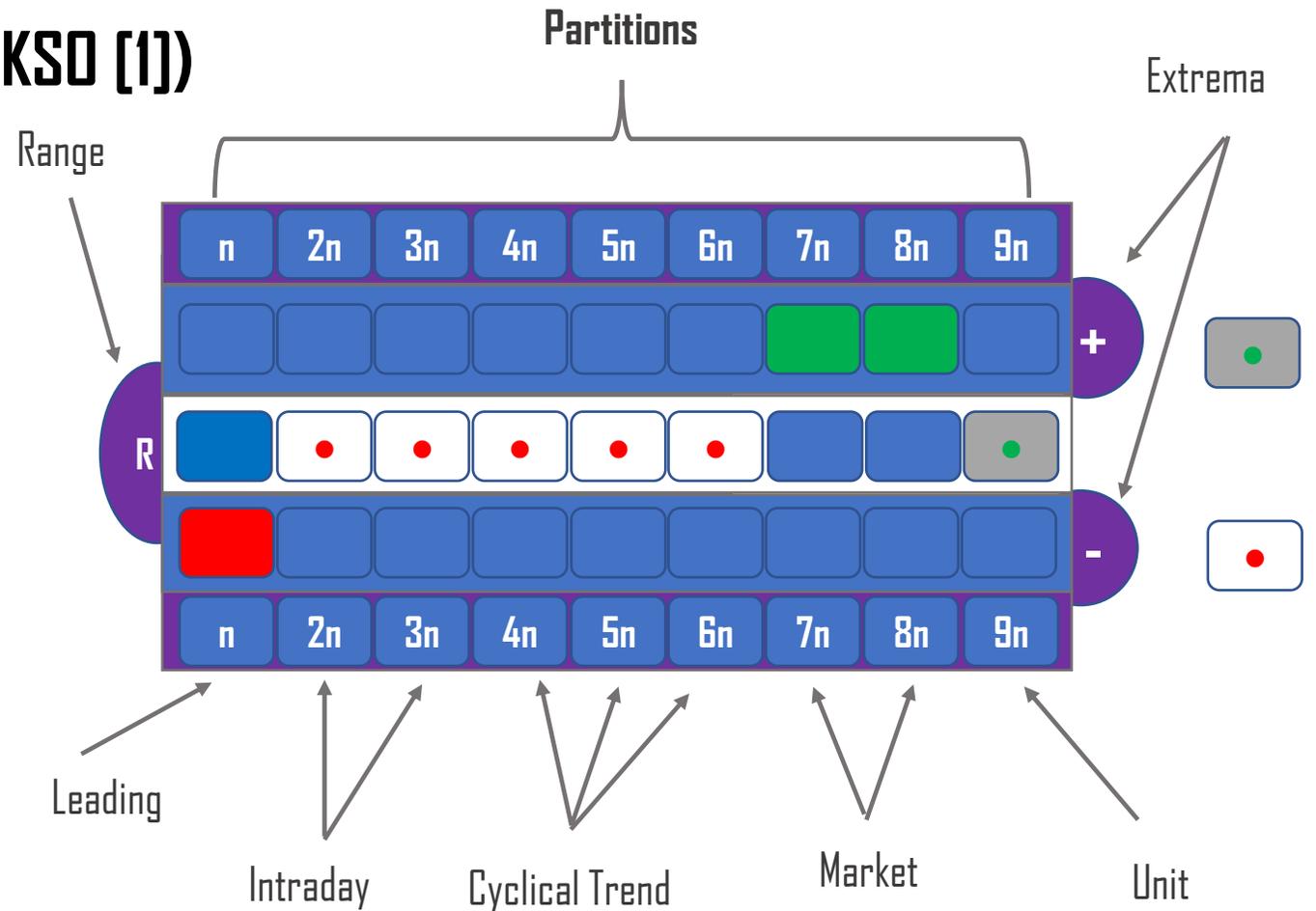
Technically (i.e. mathematically), analogues to Hurst Exponents. Very important to the trader for **knowing** what he is trading at all times.

The Kinematic Similitude Oscillator (KSO [1])

Kinematics is often called the geometry of motion without reference to cause. It is a discipline applied in Engineering to compare how well models fit with the design assumptions made for some prototype. Much in kinematics has to do with air and fluid flow and their kinematic, geometric, and dynamic similarity (similitude), in a system. Chaotic evolution is often considered a flow.

Momentum and the accurate reading of momentum is most critical in trading. Oscillators are the basic tools used to track momentum in trading. However, the oscillators currently popular with traders can be very undependable in meeting the need of especially timing reversals and in fact all other requirements for which traders need and use oscillators.

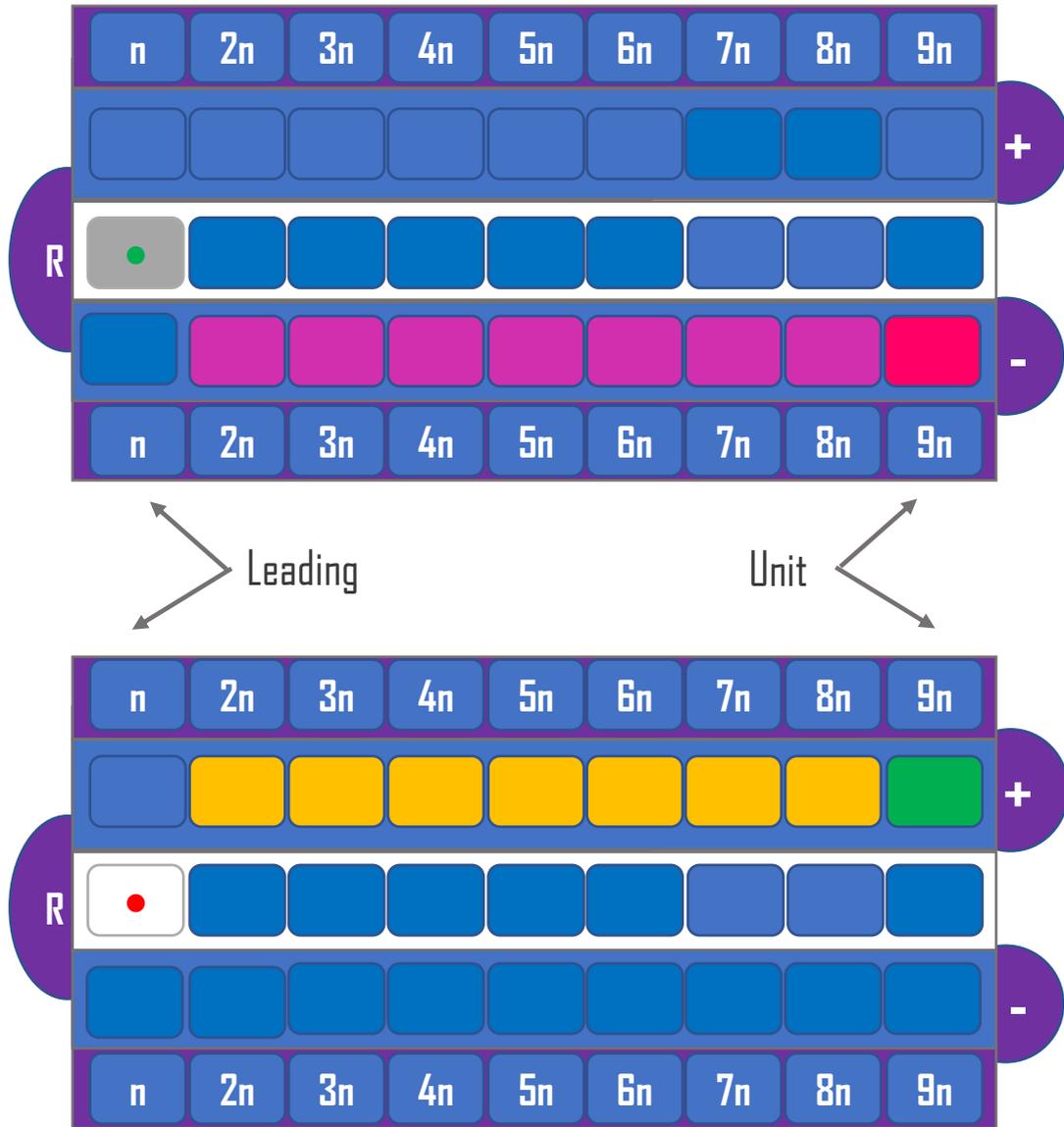
The Kinematic Similitude Oscillator is different. Using ideas from kinematics, this oscillator is designed to work so that the rate of change, shape and measure per band () are equalized at all times (i.e. the same at the same exact time). This applies across all intraday partitions. Once this was true we then adjusted its output to read the market according to the inductive pattern by which fractals evolve across all partitions. In this way, allowing for the accurate reading of momentum in terms of amplitude, reversal, direction, depth and the distribution of fluctuation in bounded space. The Kinematic Similitude Oscillator is probably the most powerful trading oscillator in the world.



To Trade Follow Flow Arrows

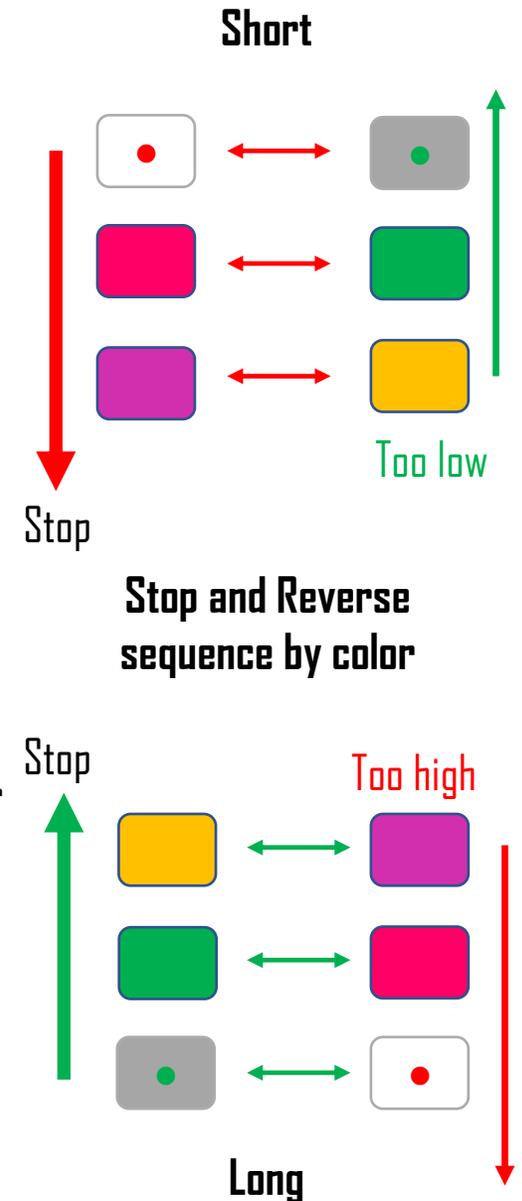
The Kinematic Similitude Oscillator (KSO [2])

Illustration



We see the same type of distribution in opposite contexts. In each case, the asset is exhibiting strong (persistent) cyclical trend in direction. This could last a day or two, or weeks, even months. In this particular situation we see the **leading** oscillator having to pullback to **range** on its way to its **extremum** high/Low upon which it will rotate back to the opposite extremum. Apart from in-phase pullbacks, we also see in each case, the **unit** registering a weaker color than its fractures to the left. This has the intuitive meaning that flow has not reached **unitary amplitude** and has more time left in direction for the unit to evolve to the same color as its fractures to mature the movement. Such intuitive interpretations can be made all the time based on the patterns we see in the KSO.

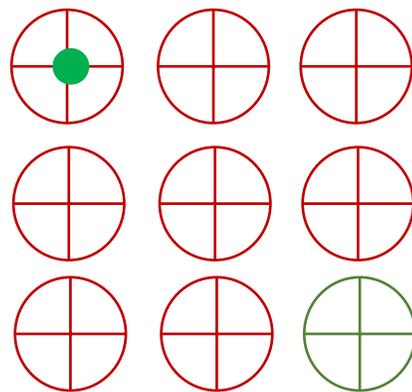
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To Trade Follow Flow Arrows



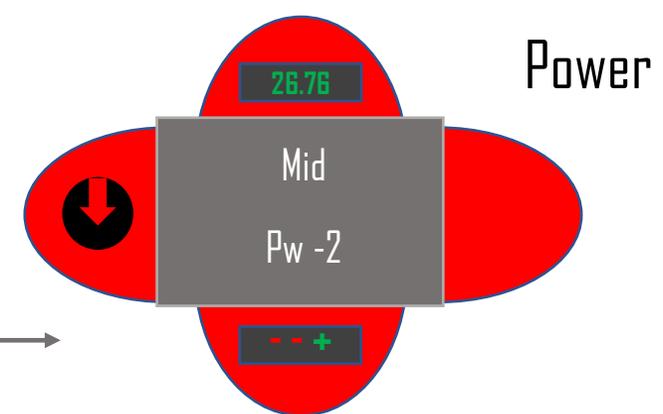
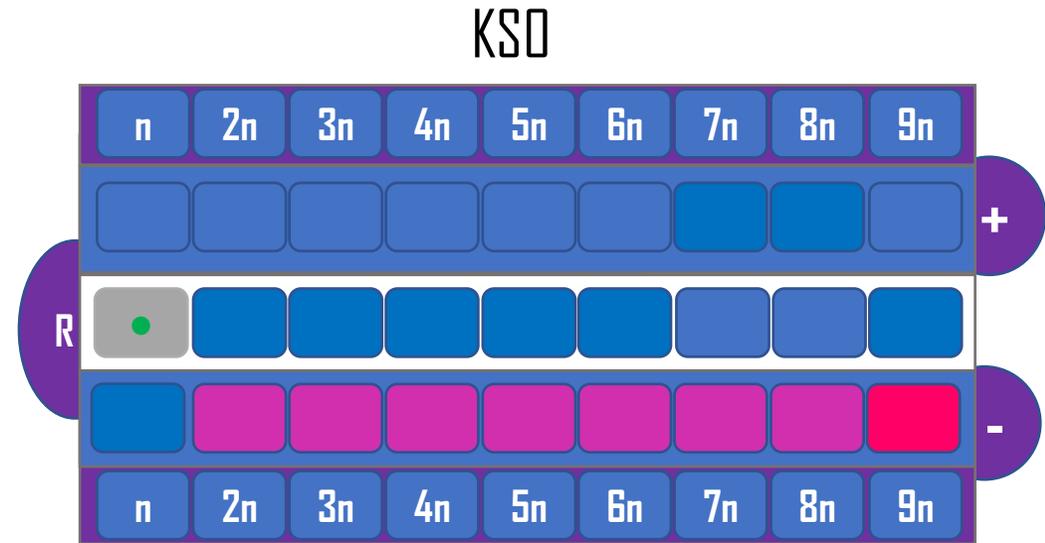
Power

In the schematic, we see 3 context readers but focus on **Power**. The KSD, and Cyclicity (which calculates the complex phasing in a multifractal market), combine in Power, to tell the immediate balance of power in the momentum we have in direction. We see that it calculates this to be -2, revealing that we have enough power and space in direction to persist lower and lower. We see in cyclicity that (**n**) is deviating higher as we do also in the KSD. Both will reverse to increment momentum lower, since in fact, 9n in both contexts, is yet to reach extremum low (by color), and the power arrow points south. The trader must conclude continuation of cyclic trend south.

↓
To Trade Follow Flow Arrows



Cyclicity



Power as such, is simply a measure of Momentum in Direction (Mid) on a scale of +1 to +3 in a bullish run and the inverse -1 to -3 in a bearish run.

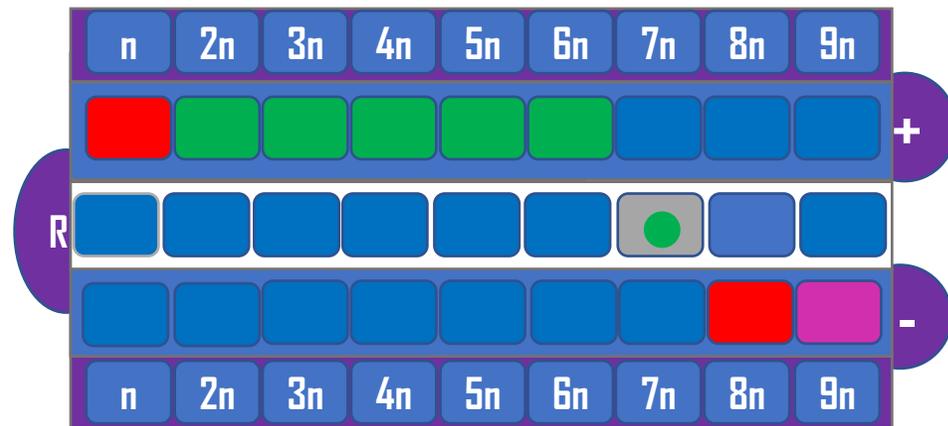
Again, we see 3 context readers but this time we focus on **Cyclical**. Every once in a while, one hears passing mention of cyclical by traded market analysts. But cyclical is the very air markets breathe. The reason this property of markets is not front and center in popular analysis is simply that few of such analysts understand the type of cyclical that define markets. Market cyclical is the type known as **aperiodic cyclical** and is very different and far more complex than the periodic genre. But aperiodic cyclical is pervasive in market action and indeed determinant.

The cyclical context reader is a critical part of the dynamical analysis of real-time chaotic flows in markets. To see this, look at the KSD diagram. We see $2n - 7n$ at the initial stages of an uprising. The leading oscillator is reversing after the hard work of getting everyone to the new state. We see $7n$ positioned to increment the immediate drive up and $8n$ and $9n$ evolving to follow. Cyclical is the piece-wise function that articulates the complex phasing per partition to mirror this evolution in ambient space. This feeds into the power measure to calculate momentum as $+1$. This result must lead the trader to objectively conclude not just that we are at the initial stage of a strong uprising, but that it is objectively sustainable into the future.

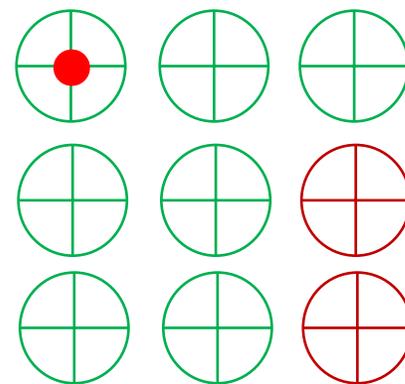
Cyclical is analogue for **Phase Coherence** at scale. This is absolutely critical in a system defined by aperiodic cyclical and assures the trader at all times of the efficacy of oscillator measurements and therefore momentum in direction.

Cyclical

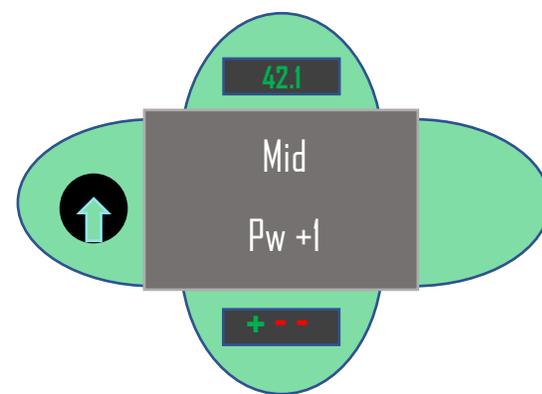
KSD



Cyclical



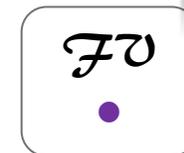
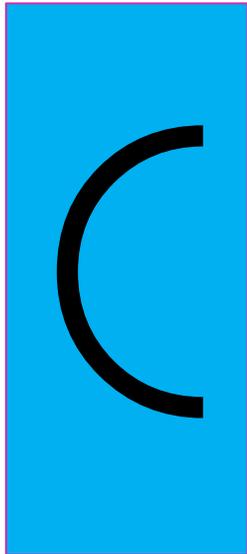
To Trade Follow Flow Arrows



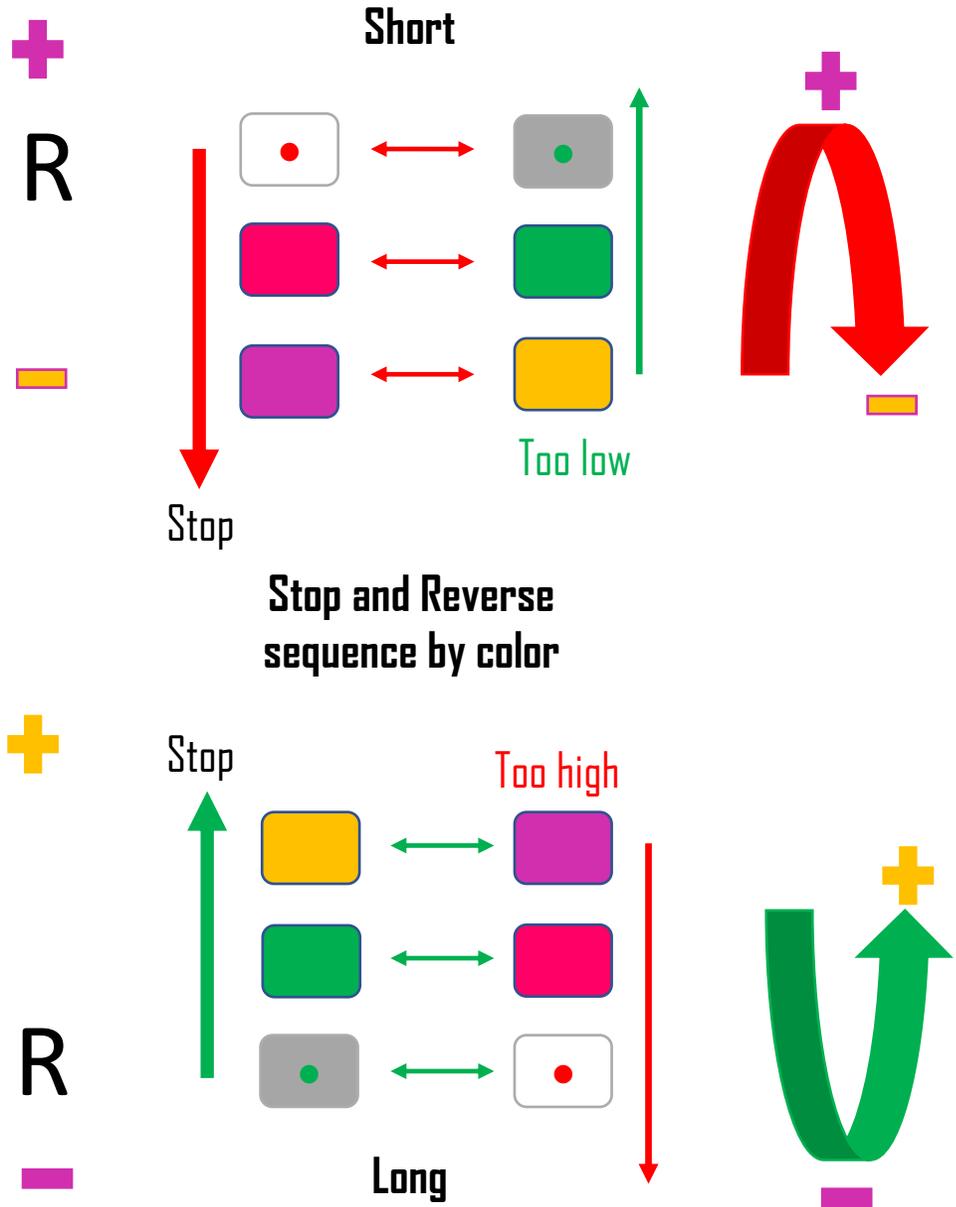
Power

Reading Icons and Context Readers

- 1) Again given that the bulk of time spent by the assessor/trader using Orbit the Tool is time spent tracking the evolution of the market from reversal to reversal, we focus on the interpretive aspects of using the information provided in real-time by Icons and Context Readers.
- 2) We show the key implications of what the Icons and Context Readers output and how to view such.
- 3) To repeat, the output of the parts and the whole of Orbit the Tool are visual and intuitively explicit. So what is explained here is learned mainly by observing the tool at work and intuiting such observations as well as relating them to market action. Again learning the tool requires a relatively short period of time.



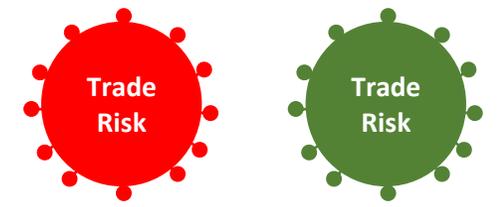
Fractal visions



Reading the KSO and Trade Risk

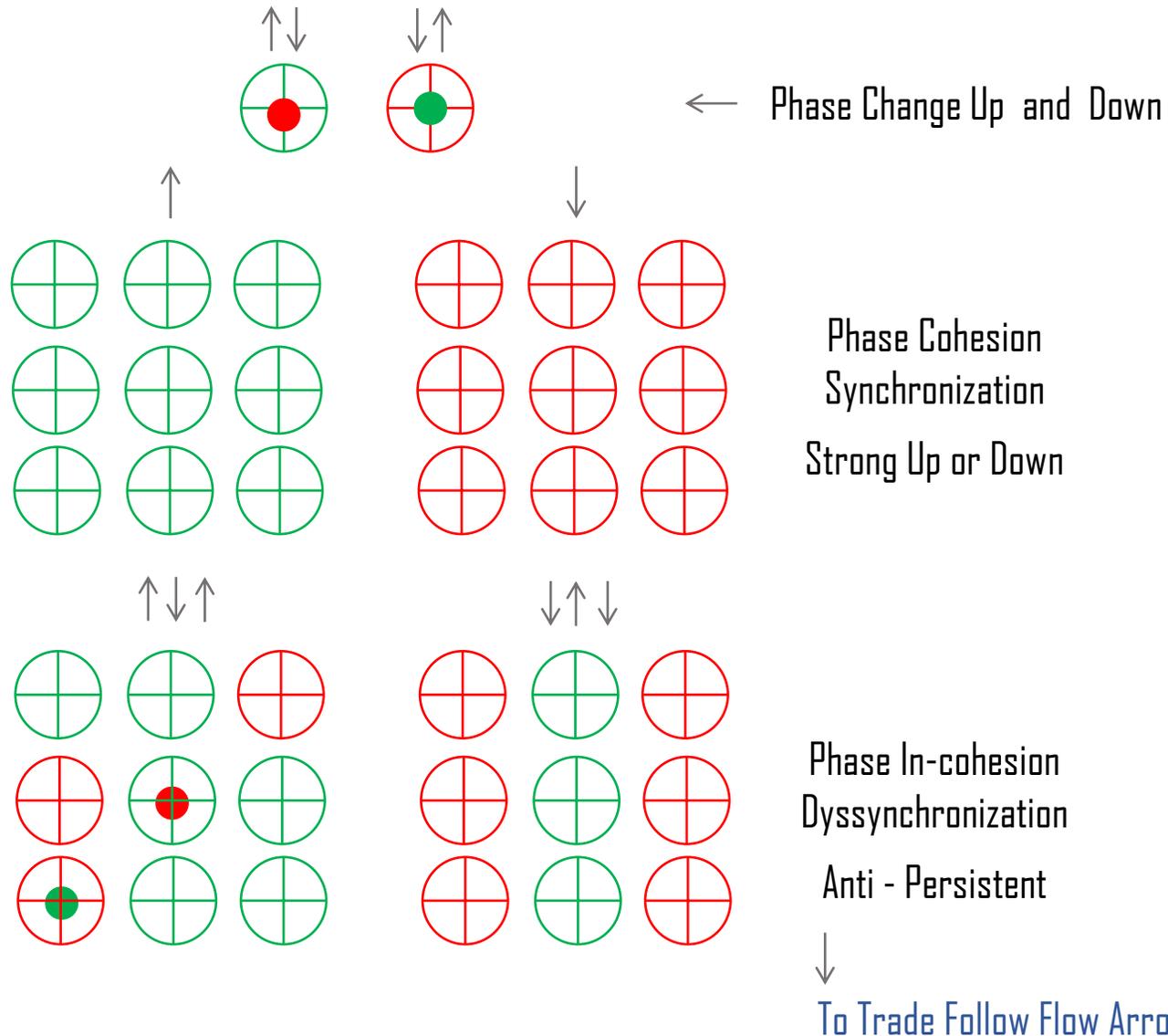
As with any other Context-reader or Icon on screen, observation for a short period makes the workings of any particular Icon or Context-reader intuitively explicit. On the left is the KSO. To read it we simply follow the color changes with an understanding that arrival at the two terminals (extrema) +/- does not imply immediate reaction by the trader. At all times we **MUST** wait for the right color to act. It is very useful to observe well the leading oscillator **(n)** and its **behavior**.

To Trade Follow the Flow Arrows

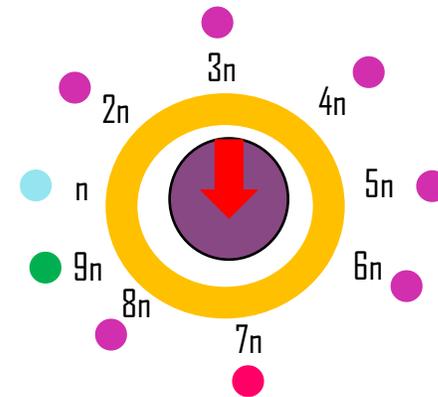


Above, is the **Trade Risk** icon in its base colors. It has a simple but very critical function. When it is **Lime**, price is falling so making long trades may bring about losses. This is true in the alternative situation of when it is **red**. Taking Short trades can bring about losses. What is important is that it pays well to heed its command, based on spot judgment. It can also be useful as an entry **cue** especially for joining trades.

Reading Cyclicity, Spot Trade and Orbit Arrow

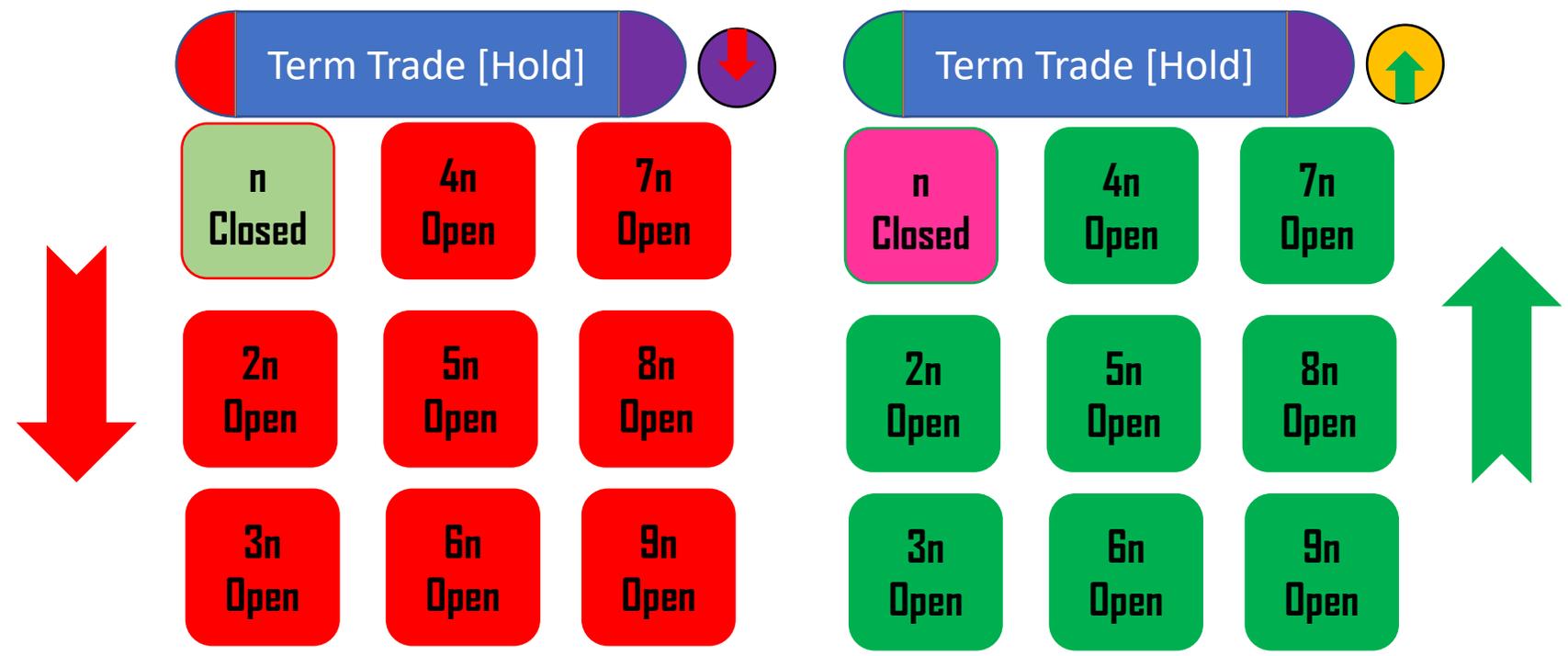


Above we see Orbit Spot. Trades for very short-term action. Should be taken **ONLY** in direction of the main trend. Price fractals are **affine** and can be very shallow counter cycle.



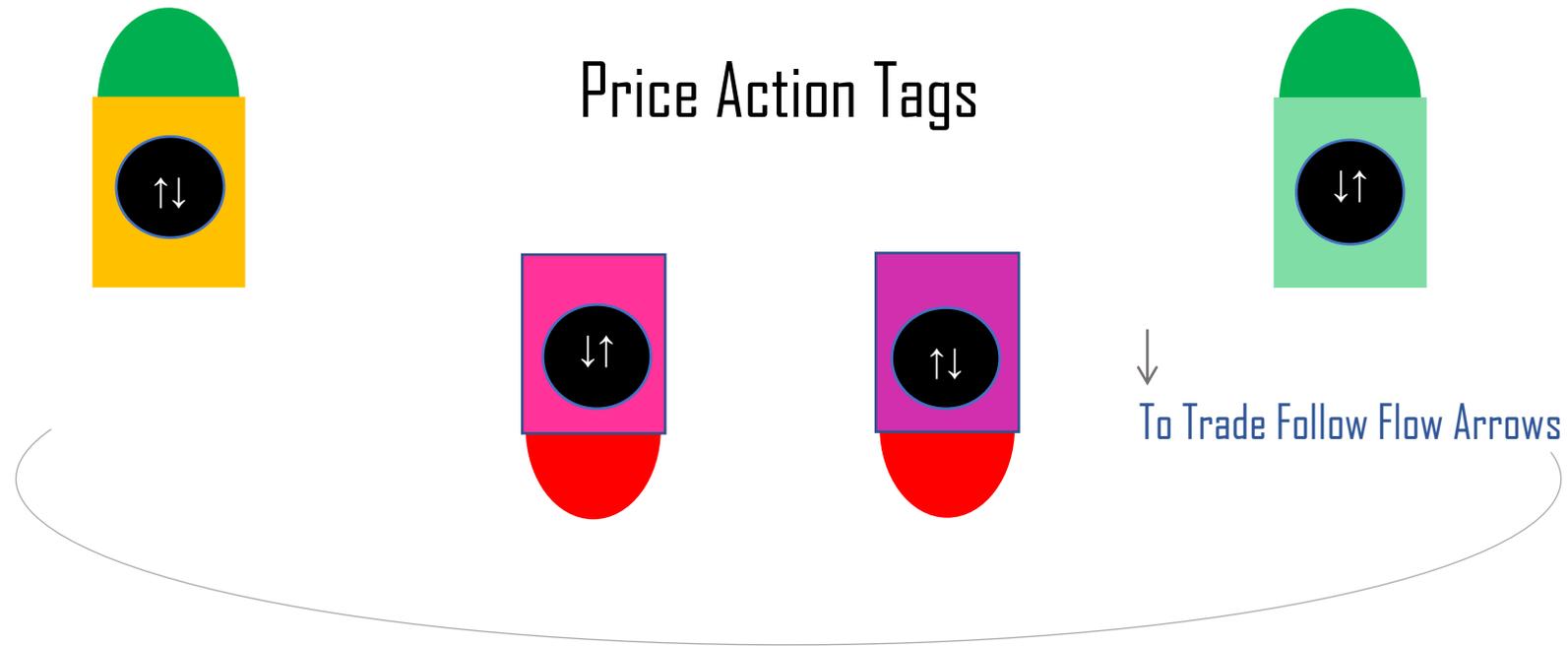
Orbit Arrow and composition, points to main direction, and inner circle color marks the intensity of flow.

Reading Term Trade as a Summary of Market Action



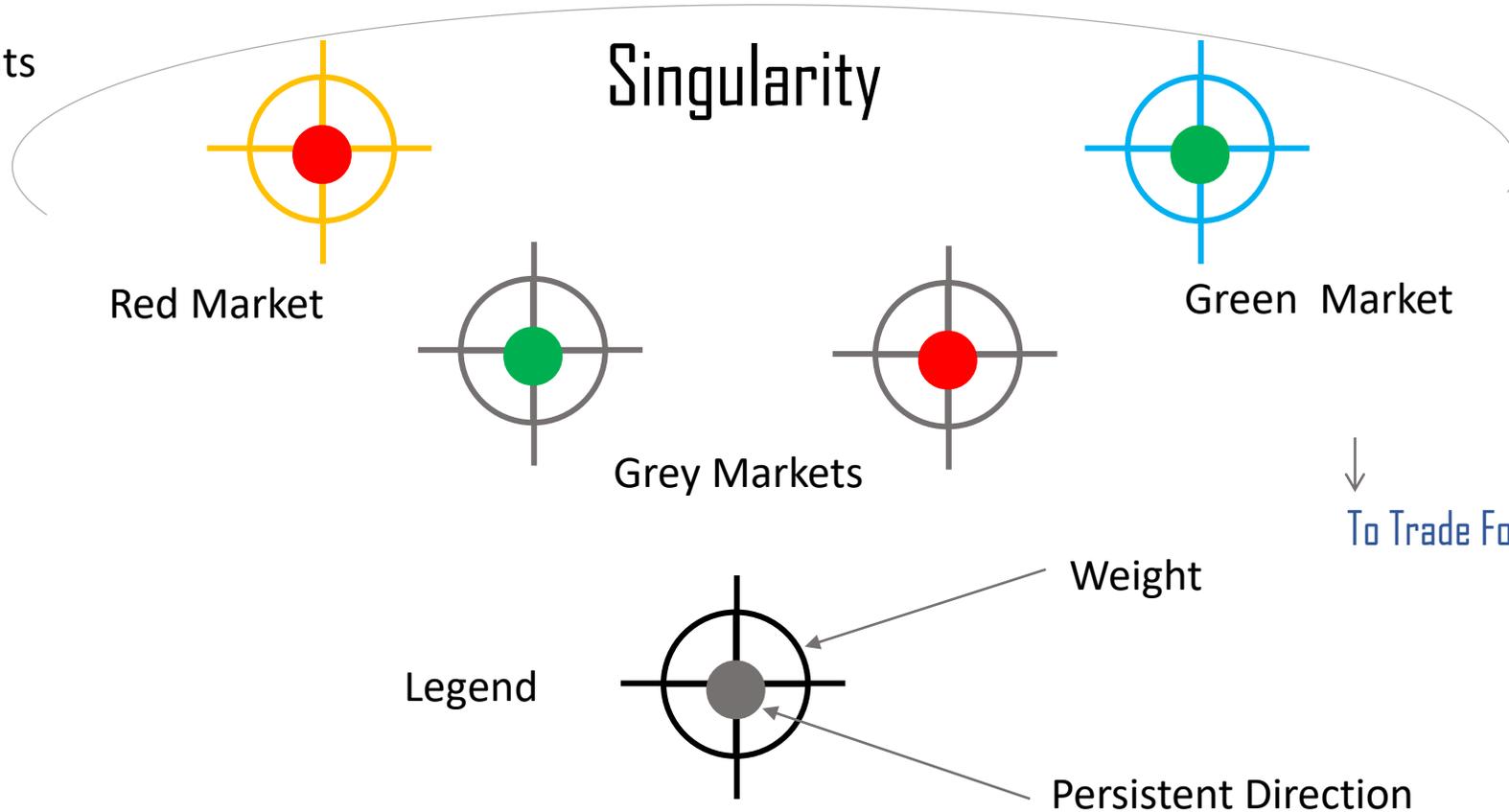
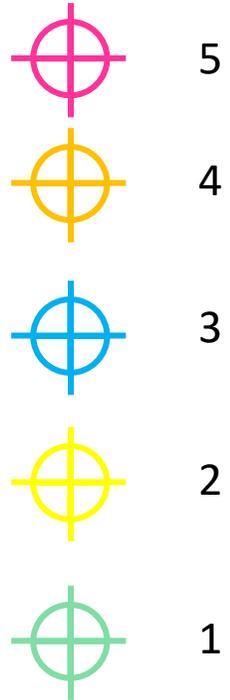
↓
To Trade Follow Flow Arrows

Term Trade: A device for reading the overall market from individual partition behavior directly compared in real - Time (such that the trader is able to manage term trades or any trade at all including scalps and swings). This module defines volatility envelopes within which each set of partition values fluctuate. A set of points asymptotically approaching say an upper or lower bound in a cyclic **down** or **uptrend** respectively, is closed and colored differently (see **(n)** in the graphics), as it merely approaches (is pulling back), and has not yet broken bounds. A set of values cyclically directed **down** or **up** maintains the color Red or Lime, and a set of values in a partition that breaks out of its volatility envelope is transformed to fluctuate in a new cyclic direction (Reversed). All partitions taken together, and directly compared, visually summarize the inductive process for the overall market and in a way that a) follows a pattern that fits with the other modules, and b) as well as assures the trader that overall evolution is consistent with what the other modules are reporting and so informing how long to hold a trade in direction. To be clear, it also proves that when a market turns, it turns in the same direction from **n - 9n** and that Time Frames are not the correct way to judge direction (i.e. everything works together at the same time and it is not correct that one time frame can be trending in one direction and the other not). This is an extremely powerful result.



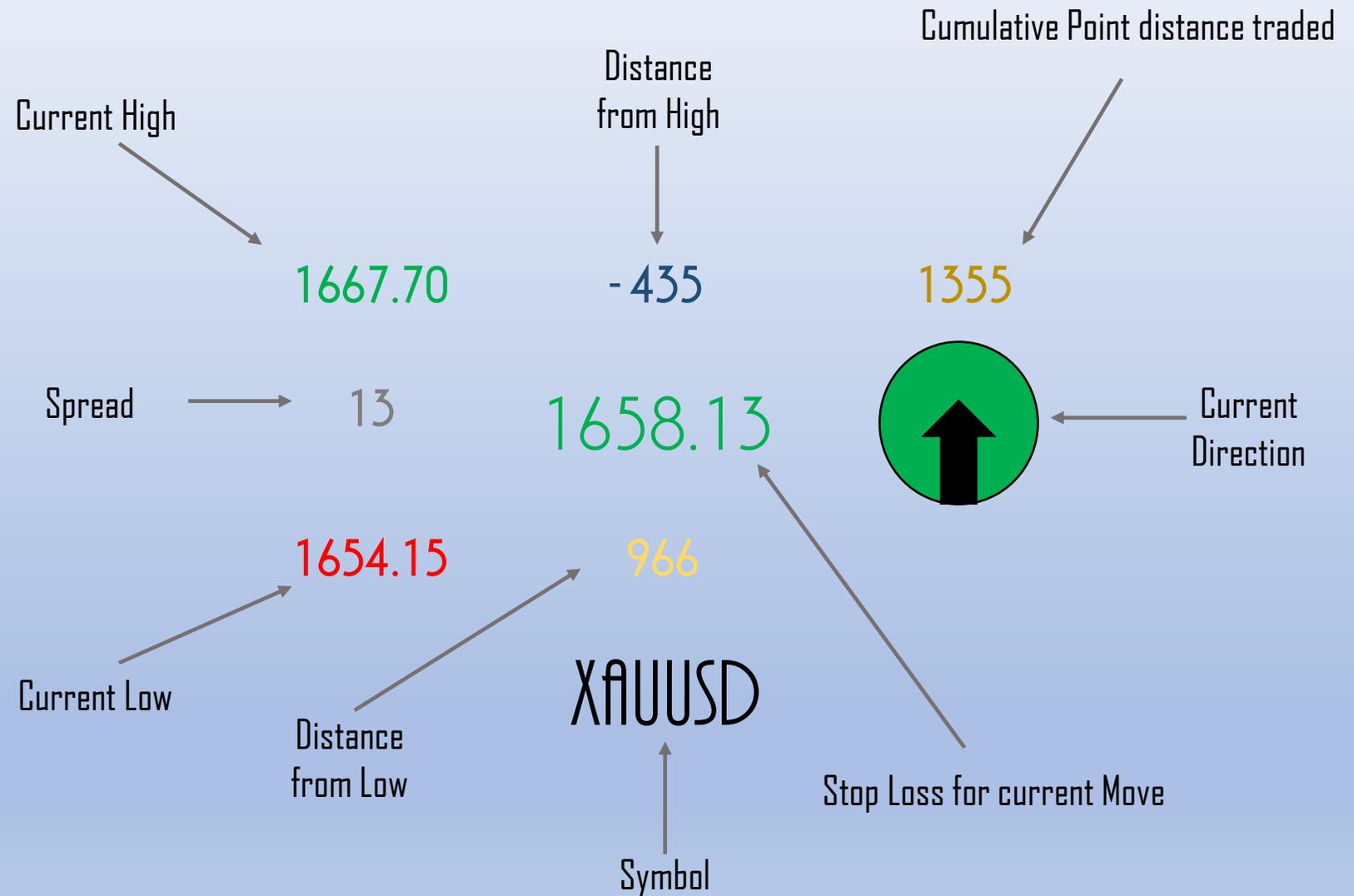
Price Action Tags: Simply require the trader to note the arrow directions left to right and as they change. In addition, to stay alert to the implied pivoting ahead of the market. Action Tags do not require any other action on the part of the trader when seen. However, the trader should note the Rank of the flow arrow(s), i.e. whether Short, Medium or Long -Term (and any combination of tags thereof), and to mentally compare the tags across terms and orient to the implied sequence of stops (up and down) ahead. The tags will dynamically adjust to changing conditions as the flow evolves. So, the tags give meaning to the price action the trader is experiencing, and represent information that merely update the trader about the fluctuations the trader observes. Including the changes to expect ahead of the market (in terms of pivots), and therefore the nature of the evolution ongoing. One gets used to their working and utility in a very short space of time, by observing them.

Unitary Pivot Weights

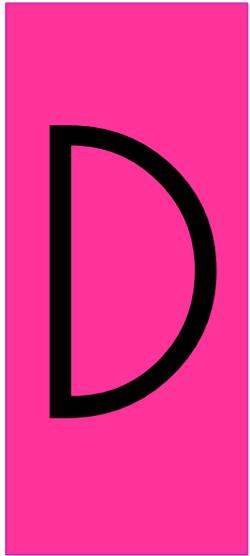


Given that market movement is bijective and driven by a $f: X \rightarrow Y$, $f: Y \rightarrow X$, and in the end, $X = Y$ always, the question at any time **is**, at the largest accumulation of orders per term, what is the direction and weight of overall movement. And is that a pro-cyclical or a counter-cyclical movement in which the market is trading? When flow is counter cyclical, direction is contained in grey markets, and when it is pro-cyclical, direction is contained in red or green markets. **Singularity** answers this question of what "trend" is prevailing in an asset market per term at all times. This is a most important question in any asset market (and hence the phrase, "The trend is your friend"). Few if any, can find the "trend" correctly and with the same consistency and accuracy (in timing), as Orbit the Tool.

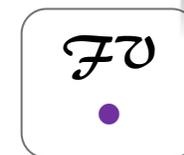
Reading Top Right Control Panel



The Tutorials



- 1) The Tutorials introduce the notion of the inductive process by which markets evolve. Many of the ideas on which traditional trading is based, depend on so-called "Technical" and "Fundamental" analysis. Which like microeconomics in the case of "Technical" analysis depends on statics. That Orbit depends on real-time dynamics is the difference i.e., uses the most up to date data which are actual data not projections.
- 2) So much of those ideas are irrelevant when trading by chaotic analysis which is the reading of the market by a mathematical pattern or equation.
- 3) Therefore, the tutorials here present notions and concepts graphically explained, that underpin what Orbit the Tool is actually doing and how we should understand overall market behavior by it.
- 4) In plain English, this is where we understand why and how trading by a pattern changes everything and indeed how this makes Orbit the Tool very different. A pattern pervades everything about the market and its **aperiodic** movements. We show how and why here, and equip the assessor/trader with the mindset to view this reality as he observes the outputs of the tool.



Fractal visions

The KSO [3]

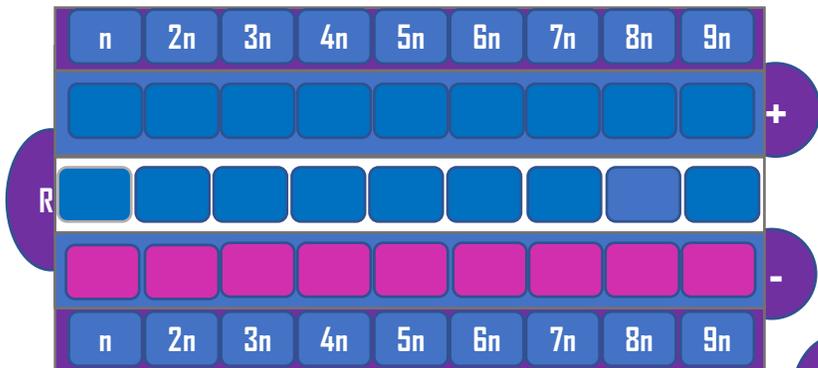
Many times we say the market follows an inductive process rather than some random process driven by news and events to define big and small market cycles. Lets think up simple analogues to understand the inductive process. Think of trend reversals as something complex that goes step by step (follows a pattern). Reversals define market cycles (big, small and even tiny), and have two parts, a priming part and a flow part. To get that down to a useful trading sense, think of the first and second parts of a reversal as the stages in an engine cycle (to a different timing), i.e. when fuel mixture gets drawn into the cylinders which then lead to the repeated explosions that drive the system (i.e. the car). We show this by the analogue evolution of the KSO



To Trade Follow Flow Arrows

Market is at Objective, a low (spike event)

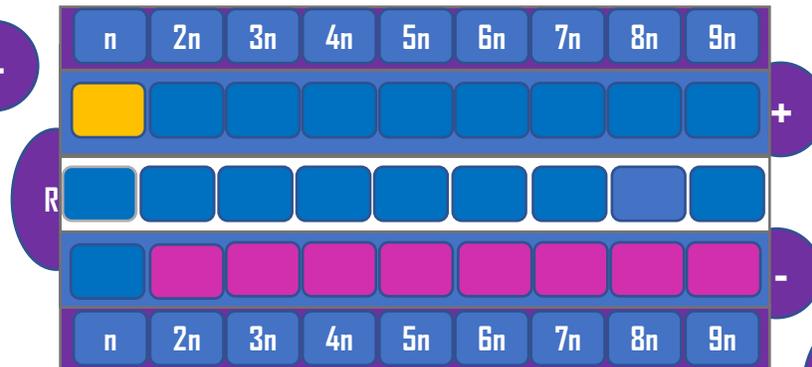
a)



All partitions are home at the same point, i.e. the lowest low in range. At exactly this point, the system (i.e. the market) initiates a reversal away from that point by following the pattern we see in [b, c, d, e, f]

b)

(n) Becomes recursive

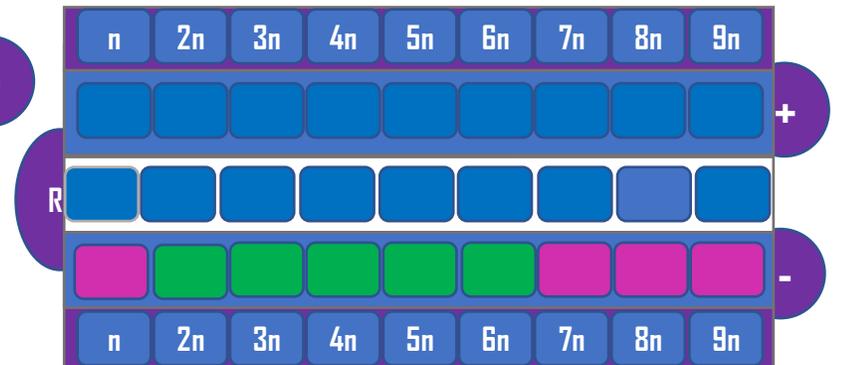


We first observe the leading partition (n) begin to fluctuate between low and high extremums (+/-) repeatedly and until next we see c "light up."

Visually we see the partitions [2n - 6n] "light up" as if "awakened" to begin the same behavior we see in (n), and to do so until 7n next "lights up."

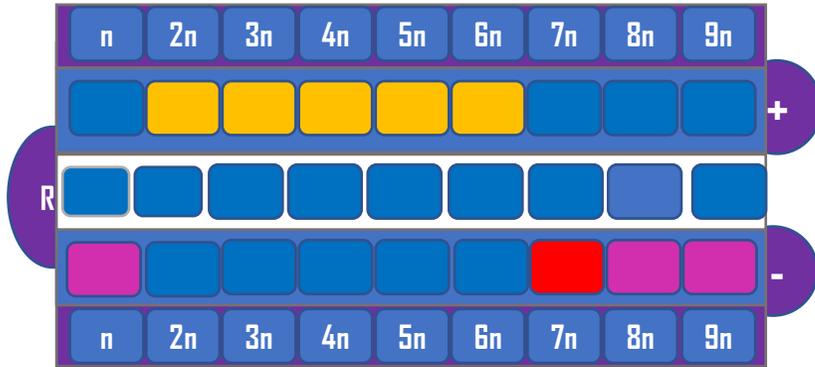
c)

[2n - 6n] is primed



The KSO [4]

d) $[2n - 7n]$ is recursive

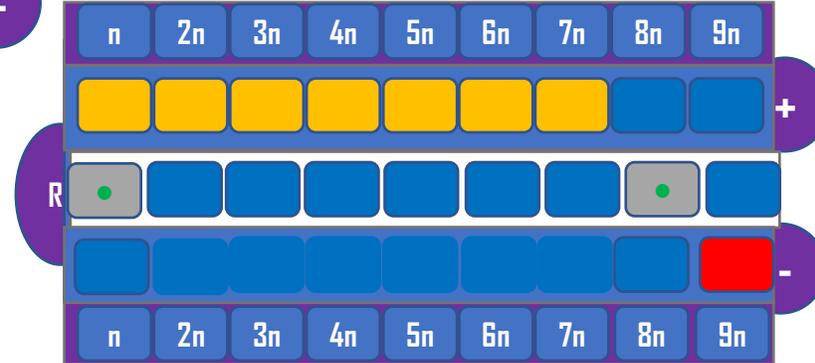


We now observe that $[2n - 6n]$ is behaving like the leading oscillator (n) earlier, and fluctuates between low and high extremums and continues to do so until next we see e "light up." and itself become recursive. So the process b) to d) is like a period in range priming the feed to "explode" into a "trend."

"We used the KSO to illustrate and show how well Orbit times the market. But it is not just the KSO that behaves in this way, it is also cyclicity and in fact it is the entire tool that is as exact in timing the market. From its tiniest transaction frame to its most."

e)

Market is primed uptrend is clear

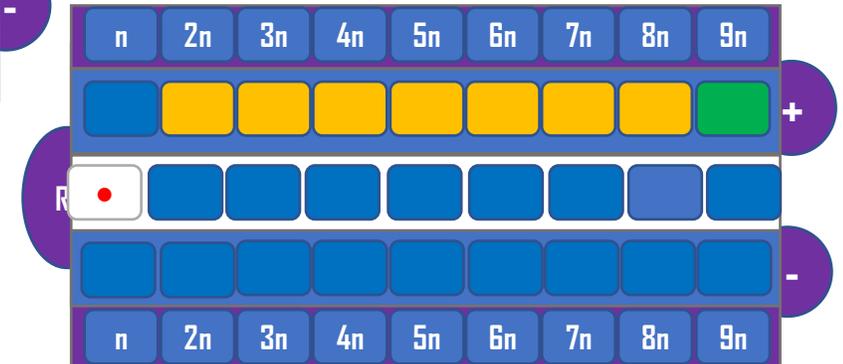


At this stage the evolution is accelerated $[7n - 8n.]$ become active up and pullbacks become very shallow, as price stays down only for very short periods before trading up again. Direction has strengthened and range action no longer constrains flow.

f)

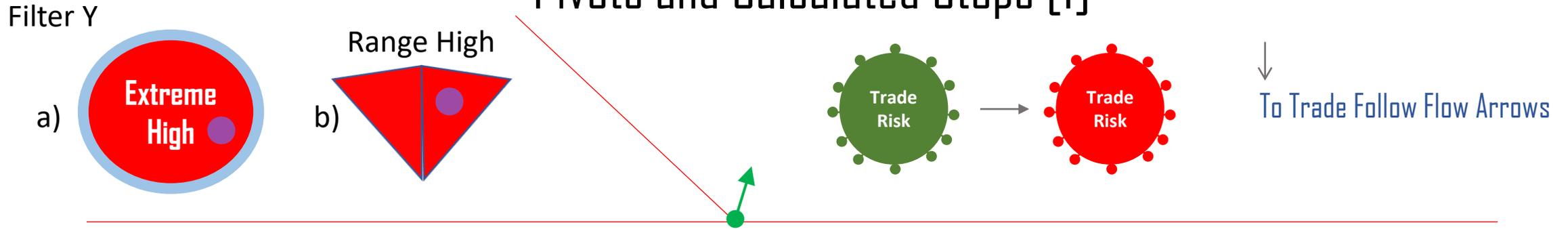
Once $9n$ is primed, direction is weaponized and the result is the persistent upward movement seen. At some extreme high this process is reversed to a downtrend exactly as for this uptrend illustrated.

Unit is primed

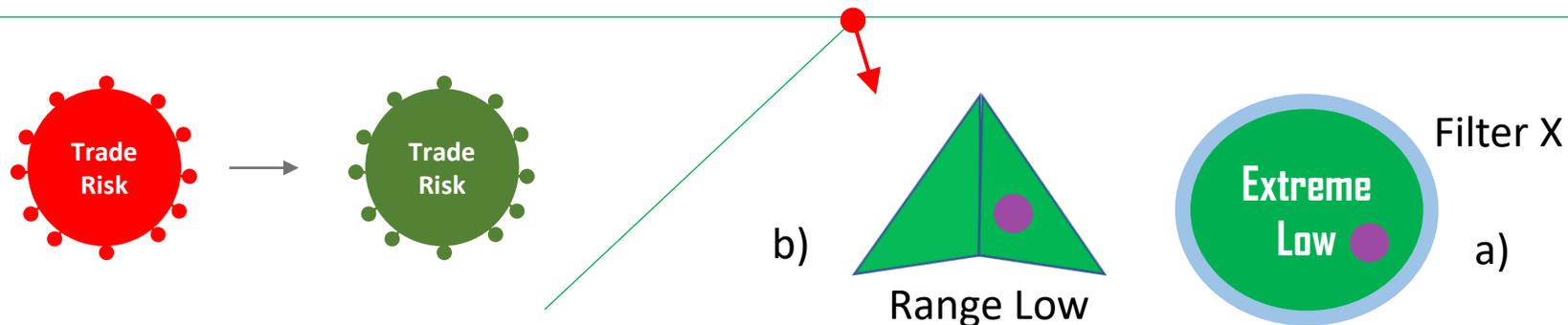


To Trade Follow Flow Arrows

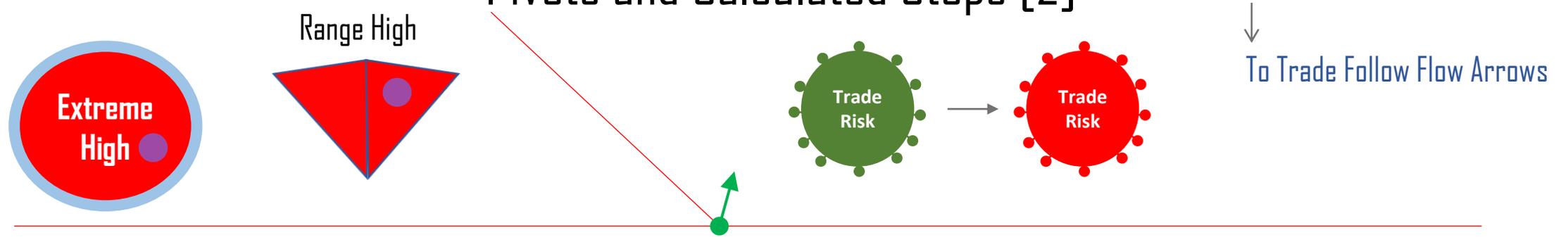
Pivots and Calculated Stops (1)



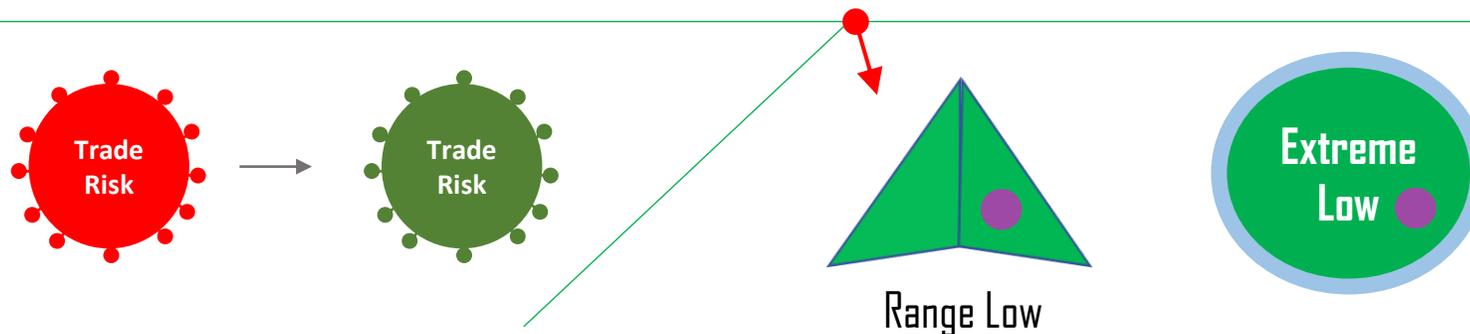
Taking the idea of an inductive process further (i.e. what we looked at using the KSD), we can take the partition (n) as measuring out some unit cycle with a unit vector contained every cycle. And that such price action scales across the feed to accumulate at higher time compressions that do not vary (n 's) pattern in any way. As the other partitions begin to join in the fray, we must see the range (upper and lower bounds in ambient space), expand to accommodate this scaling behavior. This means the feed (n - $9n$), follows some proportionate scale (that work as scalars), such that linear combinations of (n) at different measures of accumulated time define stop levels in different partitions to the same base. So if we assign weights on the Ordinal scale 1 – 5 and assign colors white, yellow, aqua, orange and magenta in the same order, we have an effective amplitude tracking device. Therefore, allowing for the fact that the time it takes (n) to accumulate to a stop in partitions is arbitrary, if we see a marker onscreen, we have a calculated stop or pivot to trade. Where the Range High/Low icon appears alone we have an intermediate stop and where both Range High/Low and Extreme High/Low appear together, we have major reversal (subject to comments next slide).



Pivots and Calculated Stops [2]

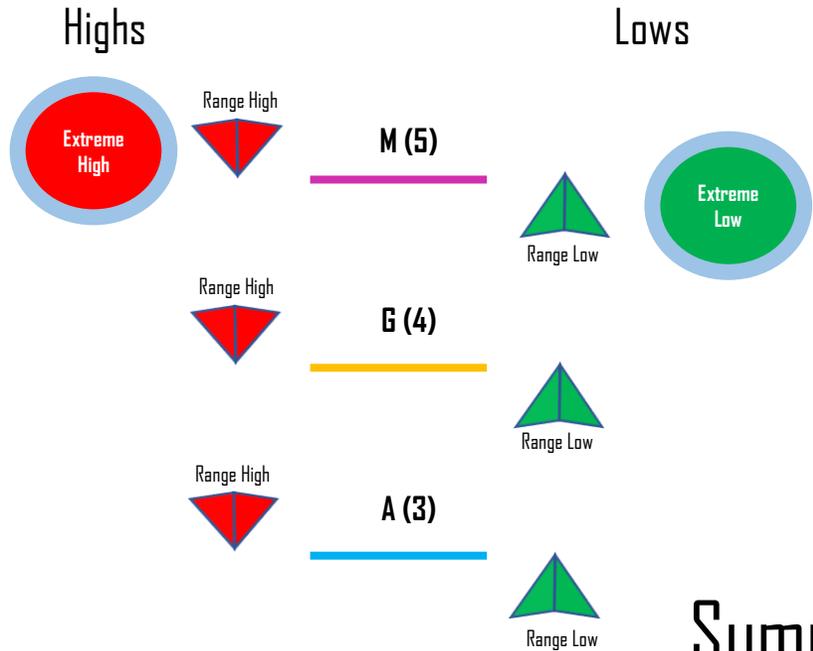


So what does the preceding mean for our trading? It means we can time and trade scaled reversals (including pullbacks), to pivots. However, if we recall, the KSO showed a) distinctly different behaviors over the 2 stages of the inductive process, and b) by implication the behavior of price is also different over the 2 stages of evolution. This means calculated stops or pivots in the priming stage will behave different from calculated stops in the flow stage (in terms of properties). In the priming stage, stops will be more frequent and therefore calculated at relatively shorter intervals compared with stops calculated in the flow stage. This is because in the flow stage, in-phase pullbacks are so shallow that the range between calculated stops (and especially the maximum stop $M(5)$ low/high) can be extensive. In addition, the time (n) accumulates to a stop in the flow stage can become pretty extensive. So the trader needs to be conscious of what stage (roughly), of evolution the market is trading. So, judgement is required based on spot knowledge (meaning taking all the information on hand into consideration, i.e. the information as observed onscreen), to action readings. Because this dynamic is so important we summarize in the next slide.



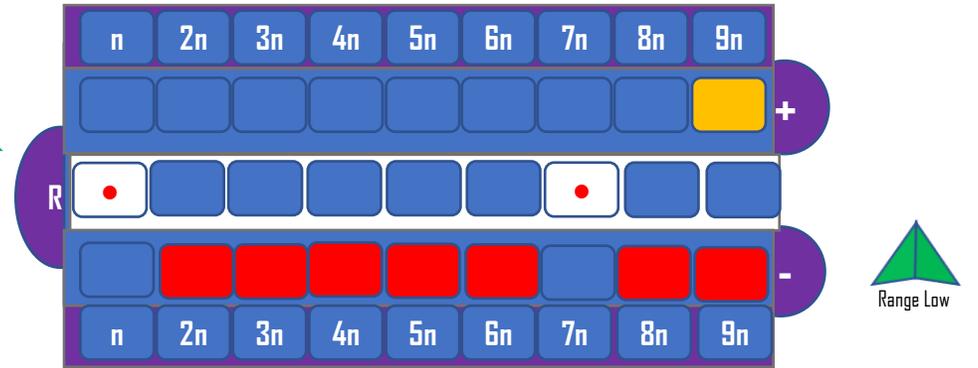
Pivots and Calculated Stops [3]

Calculated Stops and Price Cascades

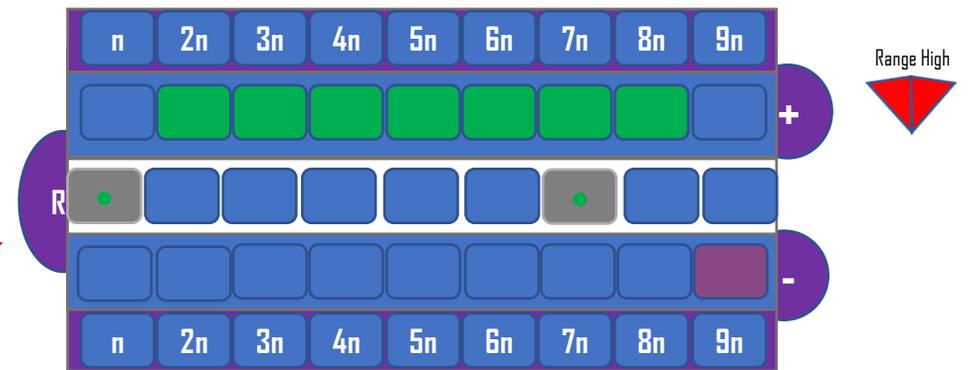


Summary

Calculated Stops are special pivots (with refinements on), shown by order of depth, with A(3) the least depth and M(5) the most depth or range. The lower depths are nested in M(5). Associated Icons indicate the events live and Only M(5) shows 2 Icons at a time to indicate a major reversal. Depending on scale, the unified sell/buy commands may or may not trigger a new direction (particularly for the lesser depths). In such cases use Trade Risk to judge entry (if desirable).



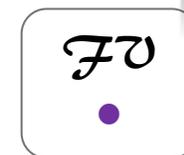
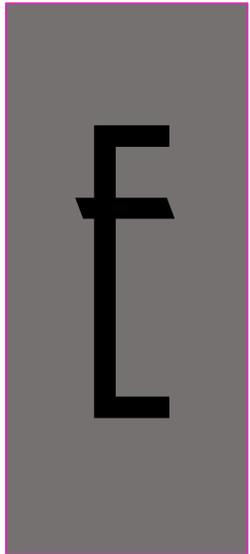
These are remarkable KSD distributions when coupled with the Range Low and Range High Icons. They occur mostly at the G(4) level of Calculated Stops. That level stop has the most depth, next only to M(5). Note the extreme deviation of the 9n's (outliers in opposite bands), and the fact that both active extremums +/- measure containment (colors remain in the first shades of a fall and rise respectively, without further evolving to the next shade at the time of a Stop notice. Cascades describe their rise and fall.



To Trade Follow Flow Arrows

Technicalities

- 1) In this section we provide some background to some of the technicalities behind Orbit the Tool.
- 2) We show what mathematics means by chaos and in a way that is easily verified by the assessor/trader as directly descriptive of markets, and introduce what we mean by a mathematical pattern using fractal geometry (the geometry of chaos).
- 3) We then introduce an important tool we use in the model, how we use it and why. The use of this tool (the Mean Reversion Tool) is very different from how it is applied in Old School trading.
- 4) Finally, we show the fit between Economics and a chaotic model of the market and stress that nowhere in the market is randomness to be seen to apply. A pattern applies everywhere even at the root of markets.



Fractal visions

What is the Cause of Market Chaos

[a] People in the business today have certainly heard about chaos and that it applies to markets. [b] But many of such persons do not know what **CHAOS** actually is. [c] For instance, mathematics explains the **cause** of chaos differently from THE WAY industry participants understand it. [d] Mathematics says, chaos is caused by “an operation akin to the repeated folding and stretching of the space to which the variable maps.” [e] That means, it is a **behavior in the numbers** and nothing else that causes chaos. We see this better on live screen. To do so please open to a live session in MT4. Choose Market Watch and go to Tick Chart as shown on the right (screenshot).

[f] You will observe an indirect measure of chaotic action on markets as the repeated **folding** and **stretching** of the space to which the variable (tick) is mapping. This is what mathematics defines as causing market chaos nothing else (i.e. a behavior in the numbers when assets are traded). [g] As is implied, this action at the lowest resolution accumulates to the larger time compressions to define market action as shown in the screenshot. [h] What we see at root therefore, is a pattern which is also unchanged at the highest resolution of market time. [i] So market chaos (“the butterfly effect”), is a behavior in the numbers unaffected by any external factors or conditions including how traders feel or do not feel about anything at all as they trade. The economy and economic events, wars and famines, etc. These do not cause chaos by their presence or absence. It is simply, the repeated folding and stretching of the variable that does. Therefore, market movements cannot be validly explained outside of chaotic fluctuation.



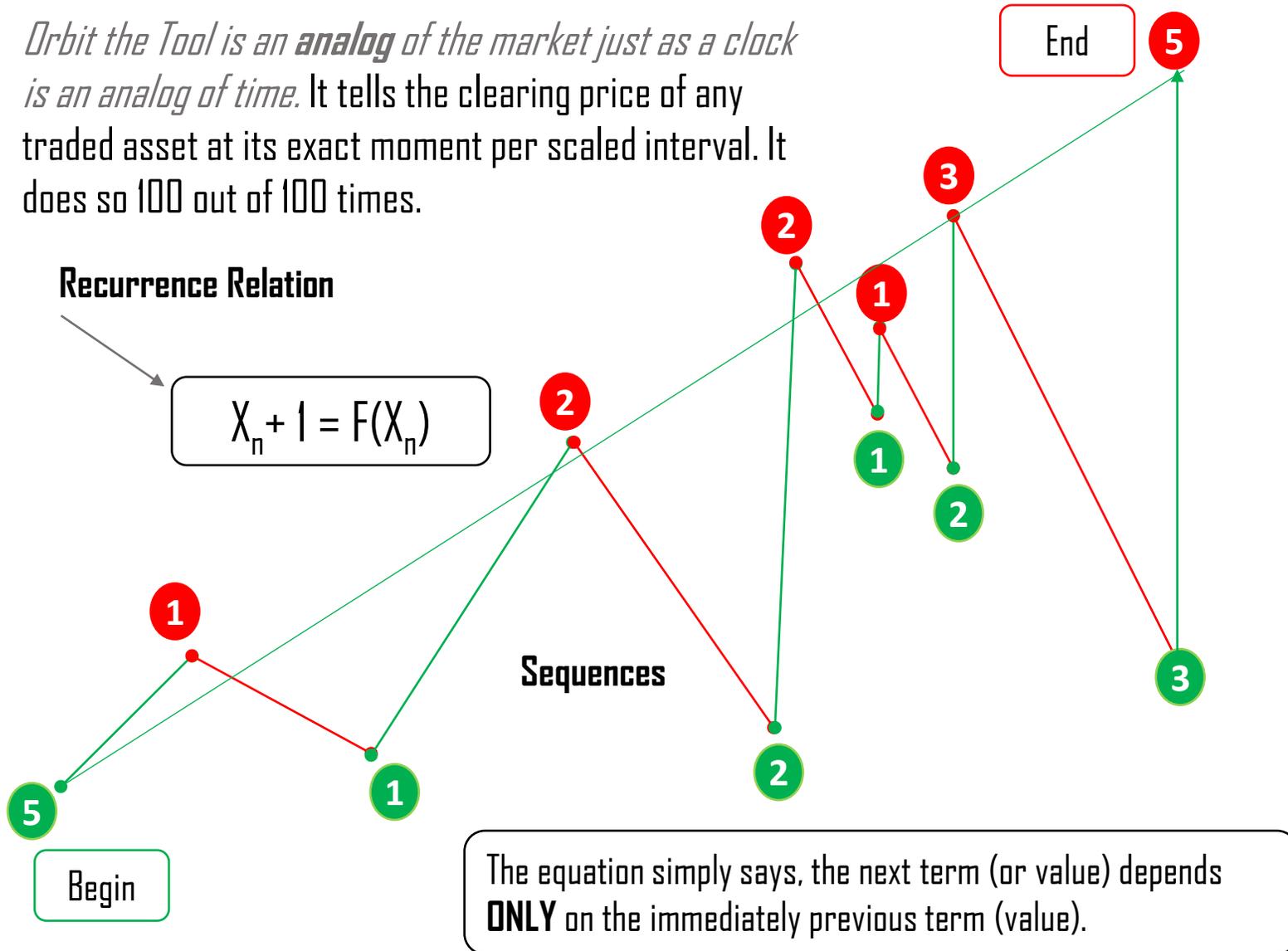
What is Orbit the Tool?

*Orbit the Tool is an **analog** of the market just as a clock is an analog of time. It tells the clearing price of any traded asset at its exact moment per scaled interval. It does so 100 out of 100 times.*

Recurrence Relation

$$X_{n+1} = F(X_n)$$

The Logic of Orbit the Tool



How?

Orbit works by reading the **Bijections** at the righthand edge of markets in real-time. In other words, Orbit reads the exact mathematical patterns that drive markets across all scales.

Using?

These patterns come from what is called a recurrence relation or function. A **recurrence relation** is a mathematical equation in which if you **know one** number you can **tell** the next exactly.

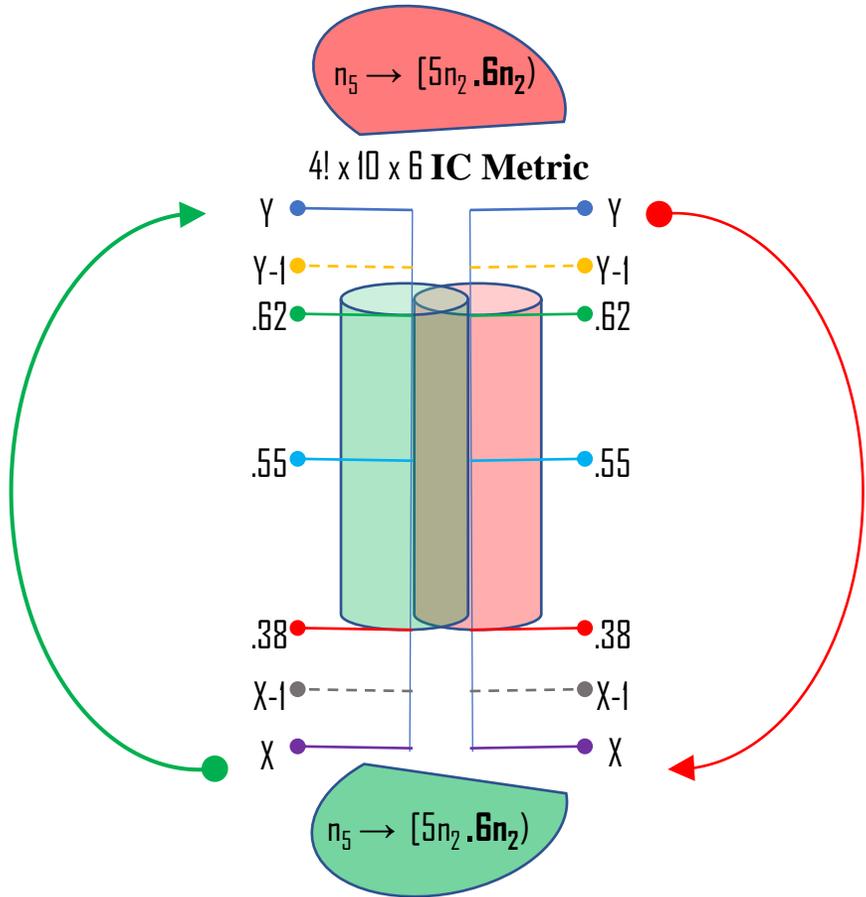
Generates the structure

This equation defines the market to be a fractured structure. The market is NOT random.



To Trade Follow Flow Arrows

The MRI Tool



↓
To Trade Follow Flow Arrows

Price is a cyclical variable and as such every fracture, no matter how tiny, submits to mean reversion as it fluctuates. The need therefore, is a tool that locates trading visually in a space-analogue of a two stage evolution in one direction. The MRI tool captures very well the **folding** and **stretching** behavior that defines chaotic movement (but does so without measuring stops to exactitude). As such, the MRI is a mix of different calculations that together define the theoretical range of fluctuations per time frame. The tool dynamically updates depending on time frame. (notice we use the idea of TF here not partitions). Its main utility is for measuring out numbers that visually locate where we are within inductive space. For the range that captures the folding behavior of price, the measure used are Fibonacci numbers [.38, .62], beyond which, at either end of this spectrum, price is exponentially divergent and measures other than Fibonacci are used including pit trader pivots. Fibonacci numbers are iterates just like price but they are not chaotic. Fibonacci uses a recurrence relation of more complex form (uses $x2$ seeds), to generate its values and not the basic equation form used by markets to run (uses $x1$ seed). So traders get to "judge ahead of the market" by where in inductive space the market is trading (per time frame). However, for estimating trade stops "ahead of the market" we think Calculated Stops should be preferred. In favor of Calculated Stops is the fact that the market is non-normal and can exceed by many times its assumed limit of 3SDs. And this happens frequently especially when the market is exponentially divergent. The market is fat tailed and far, far riskier than generally calculated to be. But Calculated Stops fit chaotic space exactly by topological measure.

The Economics in the Mathematics

Market Microstructure

Regardless of how orders flow through (the different dialects) of an electronic trading system, in the end, there must be a matching protocol that simplifies the interface between **bids** and **offers**. For this model, the lowest offers frontend an array of sell orders to match an array of buy orders – with the highest bids at the front end. And this applies across variable chunks of orders reaching the market between session open and close (and combining with existing orders). In processing chunks, elements either side of the market (bids/offers), are spaced by point value (and order size) and therefore dynamically define “demand and supply schedules”. So, these are vigorously populating ranges in market time that generate many changing variables in real-time.

This state reflects something called intermittency (or aperiodic cyclicity - the signature sign of chaos). In other words, this server farm (network of computers), that algorithmically drive order matching for the given asset market, is an intensely unstable scheme in dynamically processing latent “demand and supply curves” in market time (but that still works in accordance with a fixed pattern). Importantly (and as we have shown throughout the manual), the output of interest in this process per interval, is simply market clearing prices (or pivots), which information then feeds trader reaction over the same intervals.

What is a Pivot

Clearly, not only can we visualize the movements implied, etc from this basic order matching scheme, but we can infer from this what a **pivot** is. A pivot, is that clearing price point (order book level), that exhausts two matched (oppositely signed) arrays, where there are no further matches ahead in the current interval, or in such proximity, as to sustain an initial direction. We of course abstract from the fact that limit orders provide liquidity and market orders consume liquidity. But as long as a current range is actively populating with orders (i.e. orders are queued either side of the market), the range is not cleared and a pivot is not established to enable a reversal in such a range. Therefore, a pivot occurs, when and if the market exhausts oppositely signed arrays at a price point (order book level), with "momentum" (active queue) still on one side to reach a "new" range of oppositely signed orders. As such, spot pivots pervade the entire trading space including the shortest possible interval. This system does not exhibit stable equilibrium over any term, equilibrium is everywhere unstable.

The Chas of it all

In chaos mathematics, there is the notion of what is called a basin(s) of attraction. These are partitions on the Strange Attractor over which sequences arise with only one selected per period to make the full evolution (and hence initial conditions or the "the butterfly effect"). The market **microstructure** fits as an analogue of this concept. The microstructure is that part of the actual market where deals are made and closed, and closed mechanically. In other words, in spite of its agitated state the microstructure follows a fixed pattern and clearly behaves like a physical basin of attraction. As such combining 2^n tuples (buy/sell orders) to define quotes with trades defining points of trade. Clearly, nothing random there as deals are closed according to a pattern. So as a result we show how the economic basis of markets (the fuel) match the mathematics of chaos (the driver of markets), with no randomness in the process. There is no other known way that **economics** interfaces markets, be it micro or macroeconomics.

The Market is Fractal

"To understand market fractals, You want to understand that it is not in the shape, but in the numbers that define the shape to be everywhere the same - over and over again."

For:



Fractal visions

2022



Romanesco cabbage



Contact Me: 

Samm



+234 803 324 5544



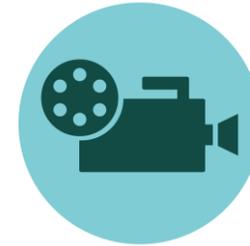
sikwue@hotmail.com



www.linkedin.com/in/samm-ikwue-774683a1



live:sikwue



1. <https://youtu.be/ZMeSgqgzRcQ>
2. Please visit for information critical to any product review with you. The video link visually presents our application of **chaos** mathematics in gaining our solution.
3. <https://www.complexity-explorables.org/flongs/>
4. Please visit and review the **Logistic Map** which is the same equation *form* as the “**analog**” equation on which our application is based. This is also useful for reference post product review.
5. Our technology (science applied to production), is a fairly arcane area of mathematics and involves novel contexts and nuanced application which may require consultation with a Chaos professor working in mathematics, fractal geometry or physics to fully grasp our claims and to verify our procedures. We welcome and strongly encourage such due diligence.