Yakkertech Metrics Dictionary

*Disclaimer: this document is just a draft as Yakkertech is still working to finalize it. Please keep this internal and only share within your organization.

Simple Columns

- PitchNo (A): Pitch #
- Date (B)
- Time (C): time pitch was thrown
- PAofInning (D): plate appearance of inning
- PitchofPA (E): pitch # of that plate appearance
- Pitch (F): pitcher name
- Pitcherid (G): specific ID # applied to that pitcher
- PitcherThrows (H): hand side of pitcher
- PitcherTeam (I): team the pitcher is playing for
- Batter (J): name of batter for that PA
- Batterid (K): specific ID # applied to that hittier
- BatterSide (L): bat side of hitter
- BatterTeam (M): team of batter
- PitcherSet (N): pitcher delivering out of stretch or windup
- Inning (O)
- Top/Bottom (P): top or bottom of inning
- Outs (Q)
- Balls (R)
- Strikes (S)
- TaggedPitch (T): pitch type
- AutoPitchType (U): pitch type tagged by system
- PitchCall (V): result of that pitch
- KorBB (W): whether a strikeout or walk occurred, if neither occurred the column will be state "undefined"
- HitType (X): If a ball is hit into play this is the type of contact that was made no matter the result (ex; line drive, pop up, etc.) If the ball was not hit into play then this column will be marked as "undefined."

- PlayResult (Y): If the ball is hit into play, this is the result whether there were no outs recorded or there were (ex; single, double, out, sacrifice, error, etc).
- OutsOnPlay (Z): outs recorded on this play
- RunsScored (AA): runs scored on this play
- Notes (AB): notes added for this play or pitch
- HomeTeam (BQ)
- AwayTeam (BR)
- Stadium (BS)
- Level (BT)
- League (BU)
- GameID (BV)
- Pitch UUID (BW): specific ID assigned to that pitch
- yt_SessionName (DG)
- Note (DH): note tagged to that specific play

Trackman

- RelSpeed (AC): Release Speed. Measured in MPH. Speed of the pitch at release point.
- VertRelAngle (AD): Refer to YT definition.
- HorzRelAngle (AE): Refer to Yakkertech definition.
- SpinRate (AF): Measured in RPM's. The amount of spin on the pitched ball.
- SpinAxis (AG) (Yakkertech Measurement): Measured in degrees. The tilt angle on the pitched ball. From the pitcher's perspective, a ball spinning at a tilt towards the right will be positive; spinning to the left is negative.
- Tilt (AH) (Yakkertech Measurement): Given as a time on a clock face from the pitcher's perspective. The hour hand of this imaginary clock points in the direction of the breaking ball for fastball and changeup. Whereas, with a curveball or slider the hour hand points in the opposite direction. So a backspinning fastball will be close to 12:00 or right on 12:00, while a breaking ball would be close to 6:00. A side spinning ball (slider or gyrospin pitch) that breaks to the right from the pitcher's view would be close to 3:00, and one that breaks to the left would be 9:00.
- RelHeight (AI): Release Height. Measured in feet/inches. How far above the ground the pitcher released the ball.
- RelSide (AJ): Release Side. Measured in feet/inches. How far from the centerline of the rubber to the side the pitcher released the ball. Left - negative; right - positive.
- Extension (AK): Measured in feet. How far out in front of the rubber the pitcher released the ball.

- VertBreak (AL): Measured in inches. Describes the vertical deviation at the plate from the straight line projection at release. This is how much the ball dropped vertically to the ground based on the effect of gravity and the spin the pitcher put on the ball.
- InducedVertBreak (AM): Induced vertical break. Measured in inches. Amount of vertical break the pitcher caused the ball to move in addition to natural movement. The spin the pitcher put on the ball caused the ball to break this much more than gravity was naturally going to let it break. From the pitcher's vantage point, the right break is positive and left is negative.
- HorzBreak (AN): Horizontal break. Measured in inches. The amount of break left or right the pitcher caused the ball to move in addition to natural movement. The spin the pitcher put on the ball caused the ball to break this much more off it's natural line than gravity was naturally going to let it break. From the pitcher's vantage point, the right break is positive and left is negative.
- PlateLocHeight (AO): Plate Location Height. Measured in feet/inches. How far above the ground the ball is once it reaches the strike zone.
- PlateLocSide (AP): Plate Location Side. Measured in feet/inches. How far to either side of the middle of the plate the ball is once it reaches the strike zone from the pitcher's vantage point. Right side will result in negative numbers. Left side will result in positive numbers.
- ZoneSpeed (AQ): Measured in velocity. How fast the ball is going once it reaches the plate.
- VertApprAngle (AR): Vertical Approach Angle. Measured in degrees. The vertical angle the ball is approaching home plate. If the ball were to remain at the same height from the moment it was released to the time it reached home plate that would be 0 degrees. -90 degrees would be straight down.
- HorzApprAngle (AS): Horizontal Approach Angle. Measured in degrees. The horizontal angle the ball is approaching home plate. Once the ball is released if it were to travel dead straight on a string towards its destination (around home plate) it would be 0 degrees. If the ball were to vere off left or right from that straight line, it will be anything but 0 degrees. From the pitcher's vantage point, the right direction is negative and to the left is positive.
- ZoneTime (AT): Measured in seconds. Time it took the ball to reach home plate from the time it was released.
- ExitSpeed (AU): Measured in velocity. How fast the ball is traveling once the ball leaves the bat.
- Angle (AV): Measured in degrees. Angle the ball went into the air from the point of contact, whether it's from low in the zone or high in the zone. For example, if the ball gets popped straight up it will be approx 90 degrees. If the ball is hit directly into the ground at the mound or elsewhere in the infield it will be negative. A ball hit directly

straight out into the field of play on the same line from the point of contact will be approx 0 or a bit more as it is hit into the air out towards the field of play.

- Direction (AW): Measured in degrees. Angle the ball went out towards the field of play from the hitter's perspective once it left the bat. For example, if the ball is hit directly towards 3rd or 1st base, an angle of 45 degrees will be shown (negative when towards 3rd base and positive towards 1st base). If the ball is traveling foul the value will be greater than 45 degrees.
- HitSpinRate (AX): Measured in RPM's. The amount of spin on the hit ball after contact.
- PositionAt110X,Y,Z (AY-BA): Measured in feet. Once the ball has traveled 110ft in the air these X, Y, and Z coordinates indicate where the ball has gone. X indicates how far the ball has traveled off of its original line to either side of the field after traveling 110ft. From the catcher's perspective looking out towards the field, a negative number will appear if the ball has traveled more towards 3rd base and positive towards 1st base after traveling 110ft in the air. Y indicates how much farther the ball traveled in the air once it reached 110ft. Z indicates how far above the ground the ball was once it reaches 110ft. These metrics will be absent if the ball didn't travel at least 110ft in the air.
- Distance (BB): Measured in feet. The projected distance until the hit ball first hits the ground. Measured from the back tip of home plate.
- LastTrackedDistance (BC): not tracked
- Bearing (BD): Measured in degrees. The angle the ball has traveled side to side once it is traveling towards its destination after being hit. For example, if the ball is headed towards 2nd base, but then the wind or spin on the ball causes it to travel towards right field, however much the ball was pushed off course is measured in degrees. From the hitter's perspective, negative will be when the ball is blown off course towards the 3rd base and positive towards 1st base.
- HangTime (BE): Measured in seconds. How long the ball remained in the air before it hit the ground after initial contact.
- Pfxx - az0 (BF-BP): Measured in feet, feet per second, and feet per second squared. The pitchfx compatible nine parameters for clients that need those figures for historical comparison.

Yakkertech (all labeled with "yt")

- yt_RelSpeed (BX): Release Speed. Measured in MPH. Speed of the pitch at release point (exactly when the ball leaves the pitcher's finger tips).
- yt_RelHeight (BY): Release Height. Measured in feet/inches. How far above the ground the pitcher released the ball.

- yt_RelSide (BZ): Release Side. Measured in feet/inches. How far from the centerline of the rubber to the side the pitcher released the ball. Left - negative; right - positive.
- yt_VertRelAngle (CA): Vertical Release Angle. Measured in degrees. The vertical angle at which the ball is traveling towards home plate. This is without factoring in the effect the pitcher had on the ball. If the ball were to not go down or up from the moment it was released and stay on a straight line the vertical release angle would be "0." Expect this number to be in the negatives most of the time.
- yt_HorzRelAngle (CB): Horizontal release angle. Measured in degrees. Assuming the ball is released from the center of the rubber, this measures how much to either side the ball moves off of that pitching line. 0 degrees would mean that the ball began traveling on a straight line from the middle of the rubber and did not move off that line. From the pitcher's perspective, right is positive and left is negative. Although pitch type certainly has an effect, expect to see mostly negative numbers from a right handed pitcher and positive from a left handed pitcher because of which side of the plate they are releasing the ball from.
- yt_ZoneSpeed (CC): Measured in MPH. Speed of the ball once it reaches the strike zone.
- yt_PlateLocHeight (CD): Plate Location Height. Measured in feet/inches. How far above the ground the ball is once it reaches the strike zone.
- yt_PlateLocSide (CE): Plate Location Side. Measured in feet/inches. How far to either side of the middle of the plate the ball is once it reaches the strike zone from the pitcher's vantage point. Right side will result in negative numbers. Left side will result in positive numbers.
- yt_VertApprAngle (CF): Vertical Approach Angle. Measured in degrees. The vertical angle the ball is approaching home plate. If the ball were to remain at the same height from the moment it was released to the time it reached home plate that would be 0 degrees. -90 degrees would be straight down.
- yt_HorzApprAngle (CG): Horizontal Approach Angle. Measured in degrees. The horizontal angle the ball is approaching home plate. Once the ball is released if it were to travel dead straight on a string (from its original release point, not necessarily from the middle of the rubber) towards its destination (around home plate) it would be 0 degrees. If the ball were to vere off left or right from that original line, it will be anything but 0 degrees. From the pitcher's vantage point, the right direction is negative and to the left is positive.
- yt_ZoneTime (CH): Measured in seconds. Time it took the ball to reach home plate from the time it was released.
- yt_HorzBreak (CI): Horizontal break. Measured in inches. The amount of break left or right the pitcher caused the ball to move in addition to natural movement. The spin the pitcher put on the ball caused the ball to break that much more off it's natural line than

gravity would naturally let it break. From the pitcher's vantage point, the right break is positive and left is negative.

- yt_InducedVertBreak (CJ): Induced vertical break. Measured in inches. Amount of vertical break the pitcher caused the ball to move in addition to natural movement. The spin the pitcher put on the ball will cause the ball to break more or less than gravity would naturally allow it to. Negative would mean that the pitcher caused the ball to drop that much more than what gravity would naturally allow it to, and positive is how much less the ball dropped due to the spin the pitcher put on the ball.
- yt_OutofPlane (CK): Measured in degrees. Direction of the spin axis on the pitched ball. Zero corresponds to 100% efficiency, while positive 90 is a perfect gyrospin ball moving counterclockwise from the pitcher's perspective, and negative 90 is a perfect gyrospin ball moving clockwise from the pitcher's perspective.
- yt_FSRI (CL): Four-seam rotation index. Measured on a 0-100 scale. A 100 reading is the perfect spin representation for a four-seam fastball. A 0 reading is the perfect spin representation for a two-seam fastball.
- yt_EffectiveSpin (CM): Effective Spin Rate. Measured in RPM. The amount of RPM's from the overall spin rate that were useful for generating break. Other than a slider, you want this number as close as possible to the overall spin rate (Column AF).
- yt_GyroSpin (CN): Measured in RPM. Amount of non-effective spin for that pitch. The higher this number is and closer it is to the overall spin rate (Column AF) it is, the less useful the spin on the ball was for generating break/movement. A full 100% gyro spin ball looks like a perfectly spiraled football. The slider will have the highest number in this metric of any other pitch.
- yt_Efficiency (CO): Measured in percentage. Percentage of spin on that pitch that was useful for generating break or late movement. This metric is directly correlated to Effective Spin (column CM).
- yt_SpinCompnentX, yt_SpinComponentY, yt_SpinComponentZ (CP-CR): Pitcher spin component. X, Y, and Z all add up to approximately 1. What angle the ball went after the pitcher released the ball. X stands for where the ball went horizontally from its original line. Y stands for whether the ball went backwards or forwards towards home plate, with home plate being positive and back towards the pitcher being negative; this should always be positive. Z stands for where the ball went vertically from release. Straight up in the air would be positive and directly into the ground would be negative.
- yt_HitVelocityX, yt_HitVelocityY, yt_HitVelocityZ (CS-CU): Measured in MPH. X indicates how fast the ball was going while curving off of its original path of destination. Towards 3rd base would be negative and towards 1st base would be a positive value. Y indicates how fast the ball was traveling while curving back into play or out of play. Z indicates how fast the ball was traveling while vering in an upwards or downwards direction from its original path of destination.

- yt_HitLocationX, yt_HitLocationY, yt_HitLocationZ (CV-CX): Measured in feet. Where the bat makes contact with the ball. It gives the exact location of the ball when it was hit from the back tip of home plate. X indicates how far from the middle of the strike zone, left or right, the ball was; from the catcher's perspective, left is negative and right is positive. Y indicates how far up or back in the strike zone the ball and bat made contact; anything in front of the back tip is positive and anything behind is negative. Z indicates how far off the ground the ball was when making contact with the bat.
- yt_GroundLocationX, yt_GroundLocationY (CY-CZ): Measured in feet - where the hit ball first touched the ground. X indicates the side of the field and how far from the center of the field the ball first touched the ground with positive being towards 1st base and negative being towards 3rd base from the hitter's vantage point. Y indicates how far the ball traveled in the air before hitting the ground.
- yt_HitBreakX, yt_HitBreakY, yt_HitBreakT (DA-DC): Measured in feet. X and Y indicate how far off of the original axis (original destination direction) the spin from the hit caused the ball to go to either side of the field. T is measured in seconds as it measures how much longer the ball was in the air due to the spin put on it. Positive would mean the ball was in the air that much longer because of the spin. Negative would mean the ball was in the air that much less of time due to the spin put on the ball.
- yt_HitSpinCompenentX, yt_HitSpinCompenentY, yt_HitSpinComponentZ (DD-DF): X, Y, and Z all add up to approximately 1. X indicates the direction the ball was hit horizontally off of its original path of destination. A positive number will appear if the ball is headed towards 1st base, and negative if headed towards 3rd base from the hitter's perspective. Y indicates the direction of the ball backwards or forwards. A positive number will show for a ball headed out towards the field of play. A negative number will show for a foul ball behind the plate. Z indicates the direction of the hit ball up into the air or down into the ground. Positive would show for a ball hit into the air and negative would be shown for a ball hit directly into the ground.
- yt_PitchSpinConfidence (DI): Measured in percentage. How confident the Yakkertech system was that it captured the pitch accurately.
- yt_PitchReleaseConfidence (DJ): Measured in percentage. How confident the Yakkertech system was that it captured the release extension metric accurately.
- yt_HitSpinConfidence (DK): Measured in percentage. How confident the Yakkeretch system was that it captured the hitting metrics accurately.
- yt_EffectiveBattingSpeed (DL): Measured in MPH. How effectively the batter swung the bat. The bigger the number the better he swung the bat. This number will always be lower than ExitSpeed (AU), so the closer the batter can get his effective batting speed to the exit speed, the better and more effectively he swung the bat.