Pitch Type

Descriptive
Savant: *Denotes what pitch was thrown, see below*

FF - Four-Seam Fastball
SI - Sinker
FC - Cutter
SL - Slider
CH - Change-Up
CU - Curveball
FS - Splitter
ST - Sweeper
SV - Slurve
KN - Knuckle Ball

Horizontal Break

Descriptive
Savant: pitcher_break_x
Measured in **inches**. Horizontal movement of a pitch. Cannot be negative (Just measures total movement, and doesn't account for left/right direction). Is **observed** (not "induced") horizontal break.

Vertical Break

Descriptive
Savant: pitcher_break_z
Measured in **inches**. Vertical movement of a pitch. Is never negative. Is **observed** (not "induced") vertical break, so for fastballs, less vertical break is generally good.

Induced Horizontal Break

Descriptive
Savant: pfx_x
Measured in **feet**. The horizontal movement of a pitch that is attributed to spin (Removing the angle at which the pitch is thrown, gravity, etc.). This is from the **catcher's perspective**. Positive induced horizontal break is movement towards first base (i.e. RHP Slider), while negative horizontal break is movement to the third base side (i.e. LHP Slider).

Induced Vertical Break

Descriptive
Savant: pfx_z
Measured in **feet**. The vertical movement of a pitch that is attributed to spin (Removing the angle at which the pitch is thrown, gravity, etc.). Positive induced vertical break is movement upwards (i.e. a four-seam fastball), while negative vertical break is movement downwards (i.e. curveball). Note that for four-seam fastballs (which have backspin), a high induced vertical break value is good, while for non-induced vertical break (because it measures **observed** break) a lower value would be good.

Spin Rate

Descriptive
Savant: spin_rate
The rate at which the pitch spins in the air, measured in revolutions per minute (rpm). Generally (but not always), more spin is considered better.
Median Spin Rate:
Four-Seam Fastball: ≈ 2250 rpm
Slider: ≈ 2400 rpm
Curveball ≈ 2450 rpm

Pitch Speed

Descriptive
Savant: velocity / release_speed
Measured in **miles per hour (mph)**. The speed at which a given pitch is moving. Generally (but not always), faster pitches are considered to be better.

Pitch Location (x)

Descriptive
Savant: plate_x
Measured in **feet**. X-Axis / Horizontal positioning of a pitch, with 0 being the center of the plate. This is from the **catcher's perspective**, so positive values are pitches closer to the first base side, and negative values are pitches closer to the third base side.

Pitch Height (y / z)

Descriptive

Savant: plate_z

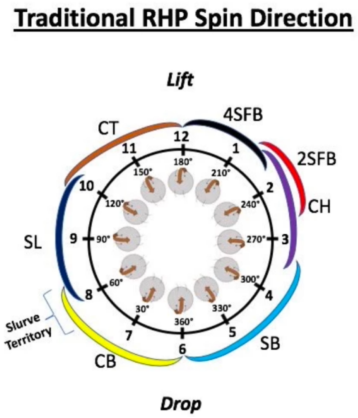
Measured in **feet**. Vertical positioning of a pitch, with 0 being the ground. In order for a height value to be below 0, the pitch must be spiked.

Spin Direction

Descriptive

Savant: spin_axis

Measured in **degrees**. 180° is a backspun four-seam fastball, 360° or 0° is a topspin 12-6 curveball.



Whiff Rate

Result (Partially Descriptive?)

Savant: whiff_percent

Measured from 1-100 (divide by 100 for proportion). The percentage of swings at a pitch that result in a swing and miss.

Put Away Percent

Result

Savant: put_away

Measured from 1-100 (divide by 100 for proportion). The percentage of two-strike pitches that result in a strikeout on that given pitch.

Run Value

Result

Savant: run_value

The number of runs that can be attributed to effectiveness of a given pitch. The lower the number the better. Negative runs means that less runs were scored on this pitch than expected. Notably, this includes the context of base/out states.

Run Value per 100 Pitches

Result

Savant: run_value_per_100

Run value per 100 pitches thrown.

Change in Run Expectancy

Result

Savant: delta_run_exp

Measured in **runs**. Change in run expectancy after the given pitch. Negative run change represents a positive outcome for a pitcher.

Change in [Home Team] Win Expectancy

Result

Savant: delta_home_win_exp

Measured in **win probability**. Change in the win expectancy for the home team after the given pitch. Negative win change represents a positive outcome for a pitcher. If your pitcher is not pitching for the home team, multiply by -1 to get their team's (the away team's) change in win expectancy.