

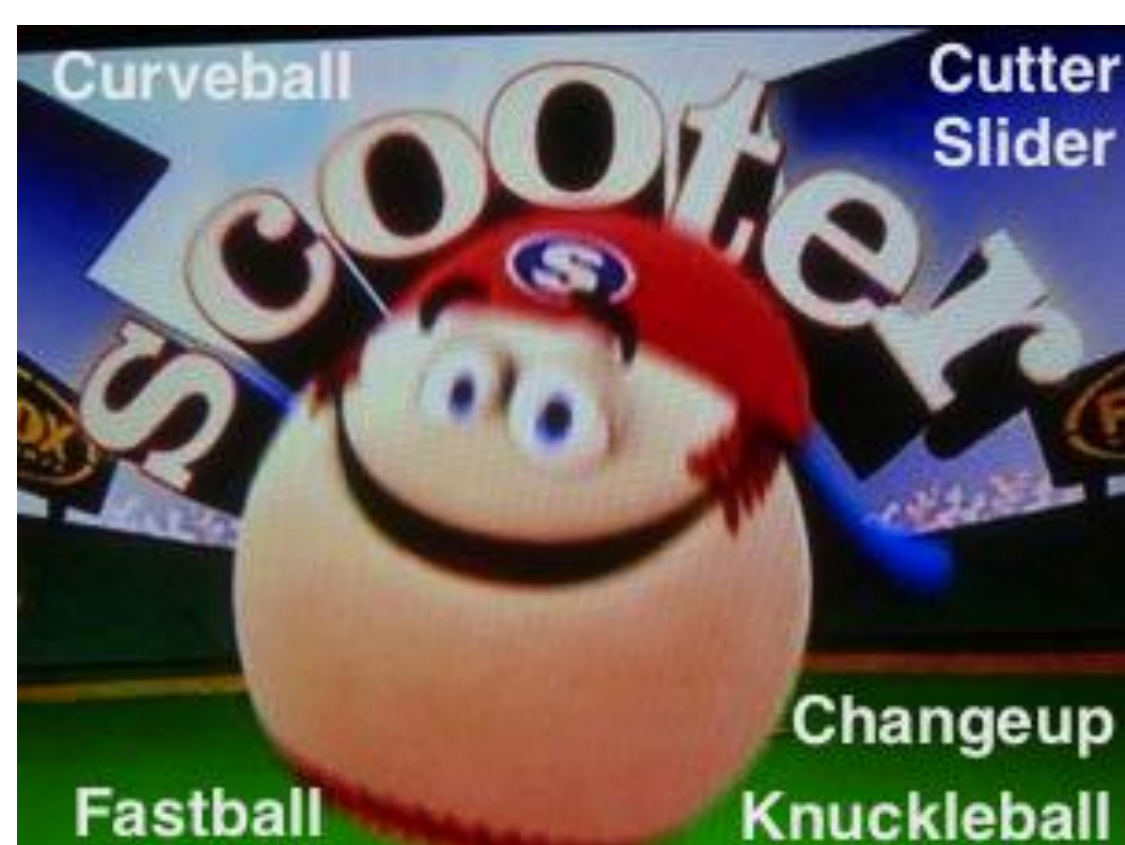


A Major League Baseball (MLB) Swing Quality Metric

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Problem: Existing advanced baseball metrics do not consider the: (1) type of pitch, (2) velocity of the pitch and (3) location of the pitch inside or outside of the strike zone in one statistic. Swing Quality does.

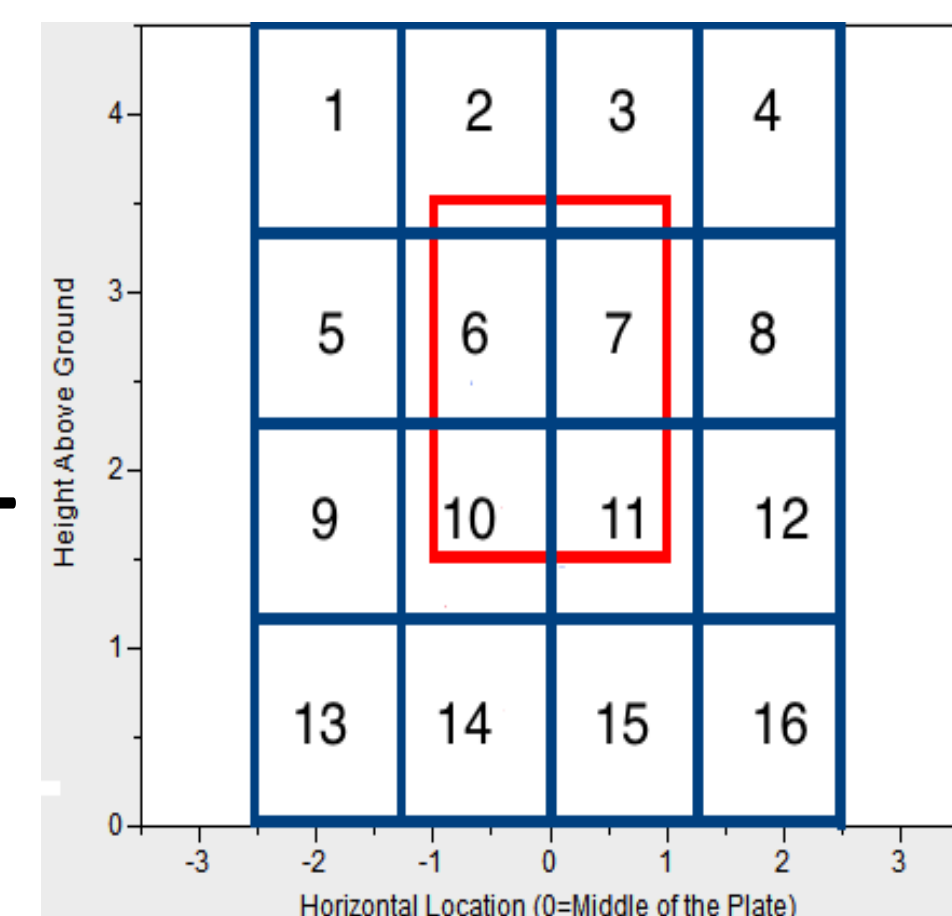
Swing Quality =



Pitch Type

Pitch Velocity
≤ 70 mph
> 70 mph and ≤ 75 mph
> 75 mph and ≤ 80 mph
> 80 mph and ≤ 85 mph
> 85 mph and ≤ 90 mph
> 90 mph and ≤ 95 mph
> 95 mph

Pitch Velocity

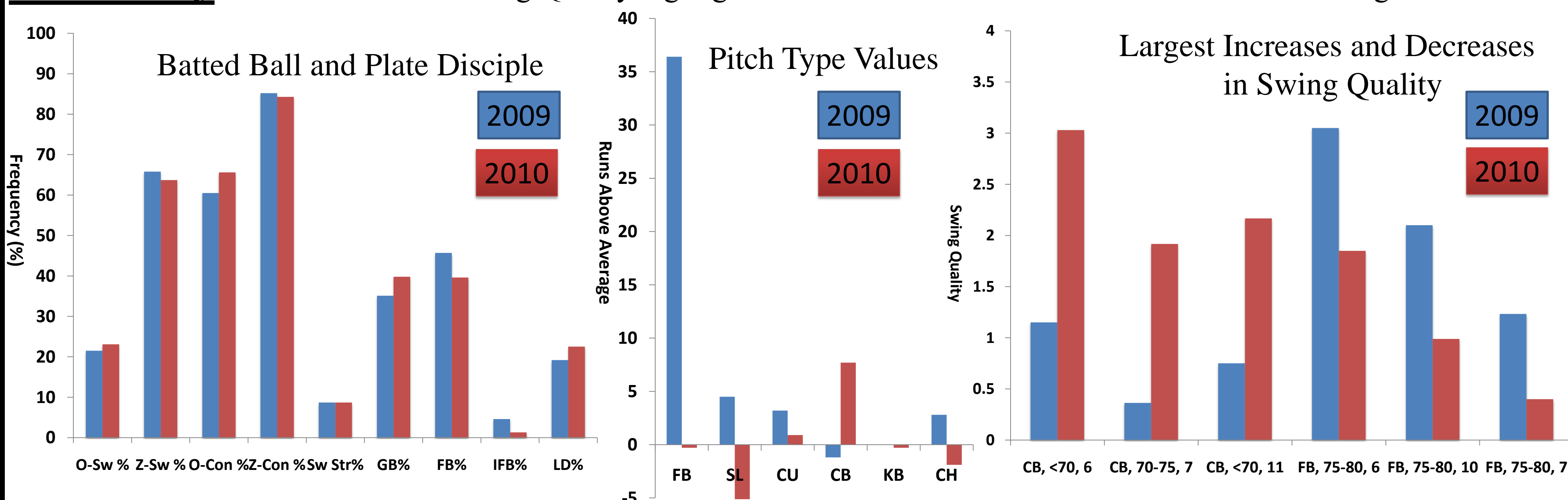


Pitch Location

Methodology: Swing Quality is computed as the arithmetic mean OPS of a hitter for a given pitch type, pitch velocity and location over a specified period of time.

1. Partition the hitter's area into 16 similarly sized zones.
2. Partition the pitch velocities into 7 categories.
3. Map the pitch type, pitch velocity and pitch location of the final pitch of a hitter's PA into its respective 3-tuple.
4. Record and map the OPS for the pitch in Step 3 to its respective 3-tuple.
5. Repeat Steps 3 and 4 for each of the hitter's PAs over the specified period of time.
6. Compute the mean of the OPS scores in a particular 3-tuple. This is the swing quality.

Case Study: Derrek Lee. Swing Quality highlights Lee's offensive issues in 2010 better than existing metrics.



Conclusion: At least three perspectives of a pitch (pitch type, pitch velocity and pitch location) are necessary to completely evaluate a hitter's offensive performance against it. In the future we plan to expand our swing quality metric from the final pitch of a PA to each pitch in a PA. Our expectation is that our swing quality metric will be used in concert with scouting reports and existing metrics to provide player evaluators with a more complete view of a hitter's ability.