Animating Expected Possession Value in the NBA with Player Tracking Data

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Introduction

In a MIT Sloan Sports Analytics Conference Paper, Cervone et al create a metric called Expected Possession Value, EPV. They use optical player tracking data to calculate the number of points the offense is expected to score by the end of the possession in real time, given everything we know now.

EPV Formula

\[
EPV(t) = E[\text{points} | d_t] = E[\text{points} | \text{macro in } (t, t+\epsilon), d_t]P(\text{macro in } (t, t+\epsilon) | d_t) \\
+ E[\text{points} | \text{micro in } (t, t+\epsilon), d_t]P(\text{micro in } (t, t+\epsilon) | d_t)
\]

Main Contribution

I extended the above paper by using gganimate, a R package for animations, to illustrate the change in EPV during a single possession. Also, I interpreted each movement during the final minute of a NBA game on November 10th, 2013, between the Miami Heat vs Brooklyn Nets within the context of Expected Possession Value.

For more detail, please read this blogpost
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