## **Baseball Elevations**



Zachary Paul Peters

Practical Applications of Advanced Mathematics

Ms. Amy Goodrum & Ms. Anna Hunt

Summer Ventures in Science and Mathematics

The University of North Carolina Charlotte

## Abstract

As Walt Whitman says, "I see great things great things in baseball. It's our game – the American game." Baseball is one of those games that everybody can enjoy. There is not as much violence as in football and it is not as fast paced and repetitive like NASCAR. It has that happy medium that everyone can agree on. Baseball is so unpredictable that it leaves you on the edge of your seat. How is it though that it looks so simple, yet complicated at the same time? For example, pitching looks so simple that many think they can do it because they see others doing it and making it look simple. Hitting is another aspect that looks simple but is hard to do at the same time. The player has to have the bat in the right location and have it timed just perfectly so you can hit the long ball. There are also many factors that go along with hitting that can affect how far a ball goes. Some of them are actually surprising, such as temperature, weather, and elevation. In this paper I researched and tested to see if elevation really does affect how far a ball goes, and it does. By using a simulator, I found out that a ball goes farther the higher the elevation of a certain ball park is. The reason being for this is because the amount of air particles, as the elevation of a ballpark increases, decreases, which in turn lets the ball travel a greater distance.