Project: Preliminary evaluation of iStimp accuracy for measurement of green speed, compared to the Pelzmeter and Bayco Speedmeter

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Date: February 13, 2011

Summary

The iStimp, an iPhone Stimpmeter application, has gained interest as a potential tool for golfers to evaluate green speed. In this short study, we evaluated three separate locations on greens at Mission Viejo Country Club (Mission Viejo, CA; Kevin Hutchins, superintendent) to determine the accuracy of the iStimp compared to the Pelzmeter and the Bayco Speedmeter (a lower cost Stimpmeter alternative). The results are represented in Tables 1 and 2.

When up-slope and down-slope measurements were evaluated separately from one another (Table 1), The Speedmeter and Pelzmeter green speed measurements were not significantly different in five out of six speed measurements. The iStimp differed significantly from the Speedmeter in three out of six speed measurements and five out of six of the Pelzmeter speed measurements. In five out of six measurements, the iStimp exceeded the speed estimates provided by the Pelzmeter and Speedmeters.

When up-slope and down-slope measurements were combined (Table 2), similar trends emerged, with the Speedmeter and Pelzmeter generating statistically similar measurements, and with the iStimp consistently exceeding these speed estimates (iStimp readings were significantly higher in one out of three measurements)

The iStimp is an entertaining iPhone application. However, it frequently does not provide comparable readings to industry standards such as the Pelzmeter and the Speedmeter. In addition, the time involved for golfers to measure green speeds would result in considerable and unacceptable delays in pace of play. Based upon

this preliminary information, PACE Turf does not recommend the use of this device for evaluating green speed.

Materials and Methods

The test was conducted on poa/bent putting greens at Mission Viejo Country Club, CA on January 31, 2011. The three devices were tested in three locations on the greens.

Three balls were launched from each device (iStimp, Pelzmeter and Speedmeter) and the distance the ball traveled was evaluated.

The iStimp ball roll distance is calculated by the iStimp software by entering the distance the ball travels from the base of the screen, in centimeters. A "Stimpmeter Equivalent" expressed in terms of feet, is then generated by the software. The correlation between the software cm input for ball roll and the calculated stimpmeter equivalent is shown in Figure 1. The linear relationship allowed the process to be modified so that measurements in inches could easily be used to calculate the Stimpmeter equivalent (Figure 2). To simplify the process, the ball roll distance was measured with a ruler from the base of the screen, in inches, and then divided by 2 to produce a Stimpmeter equivalent in feet.

Table 1. Results for ball roll distance for each green speed measuring device (average of three balls per reading). Slope refers to the slope of the green where the tests were conducted (negative values are down slope and positive values are upslope). Feet refers to the distance the ball traveled measured directly or converted from the actual distance traveled into equivalent Stimpmeter distance when reported for the iStimp. Values for the same slope group of measurements followed by the same letter are not significantly different using Fisher's Protected LSD ($p < 0.05$).

Tool	Slope	Feet	
Pelz	0.6	10.7	a
Stimp	0.6	10.9	a
iStimp	0.6	11.3	a
Pelz	1.2	11.1	a
Stimp	1.2	10.3	ab
iStimp	1.2	10.1	b
Pelz	2.0	10.3	a
Stimp	2.0	10.0	a
iStimp	2.0	12.3	b
Pelz	-0.6	12.1	a
Stimp	-0.6	11.7	a
iStimp	-0.6	15.8	b
Pelz	-1.2	11.7	a
Stimp	-1.2	11.6	a
iStimp	-1.2	12.8	b
Pelz	-2.0	13.7	a
Stimp	-2.0	12.1	b
iStimp	-2.0	12.9	ab

Table 2. Summary results for ball roll distance for each sample area combining up- and down-slope values. Average values for the same Location measurements followed by the same letter are not significantly different using Fisher's Protected LSD ($p < 0.05$).

Location	Pelz	Stimp	iStimp
1	12.0 a	11.0 a	12.6 a
2	11.4 a	11.3 a	13.5 b
3	11.4 a	10.9 a	11.5 a
Average	11.6 a	11.1 a	12.6 b

Figure 1. Correlation between iStimp ball roll input in cm and Stimpmeter equivalent produced by iStimp software.

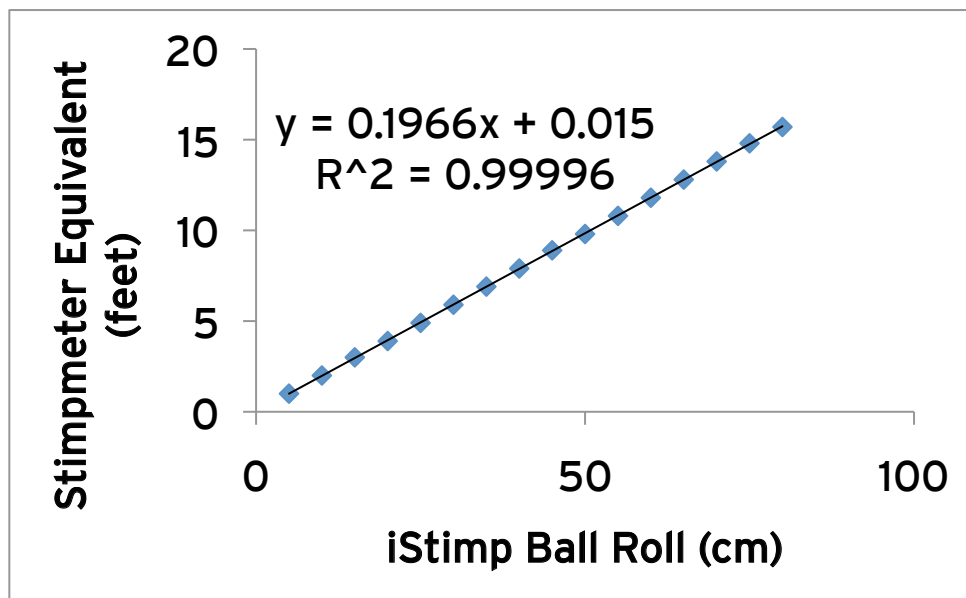$y = 0.1966x + 0.015$
$R^2 = 0.99996$

Figure 2. Correlation between iStimp ball roll input in inches and stimpmeter equivalent produced by the iStimp software. This results indicates that simply multipling the inches of ball roll by 0.5 (or dividing by 2) will provide the same measurements delivered when measuring the ball roll in centimeters - thereby simplifying the conversion and speeding the process of using the iStimp.

$y = 0.4993x + 0.015$
$R^2 = 0.99996$