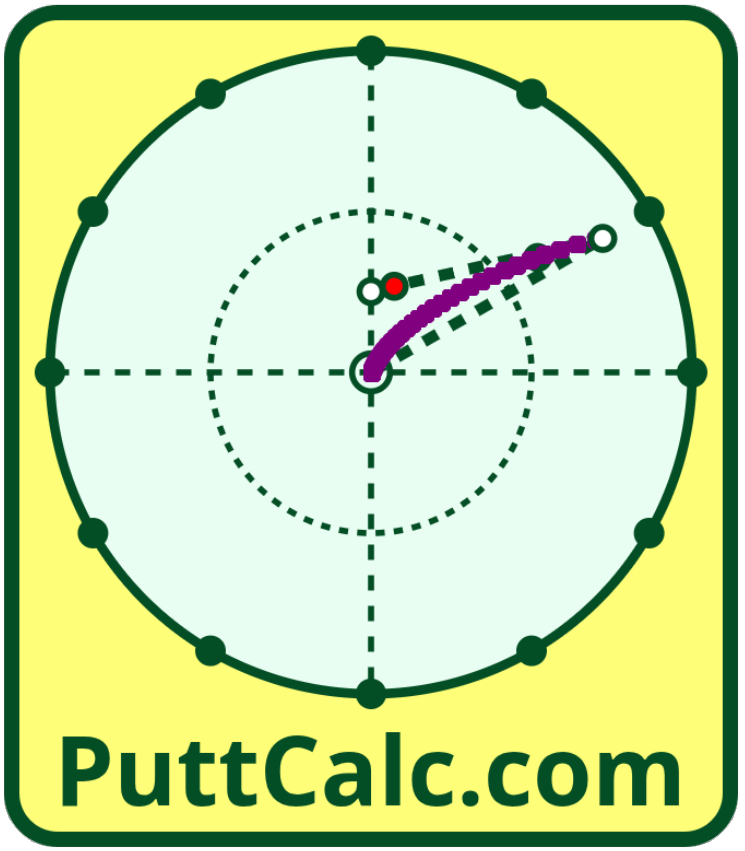


PuttCalc User Manual

Settings, Summaries, and Utilities

Software Version: 0.9.7.2

Manual Date: May 3, 2026

Contents

The Use of Settings

- Settings are provided if you want to fine-tune PuttCalc's calculations to your present situation.
- PuttCalc can be used directly (via the Dashboard), without touching the default settings, and it will still provide reasonable results.

User Interface

- The user interface often provides hints or descriptions when you hover the cursor over an object (this doesn't work on mobile devices).
- If an input is out of range, or missing when required, an alert message will pop up with an explanation.
- If you rotate your mobile device between landscape and portrait orientations, then the web pages will reorient and resize to fit the window.
- Buttons used for Settings or Utilities (press Update or Defaults to change a stored session value):

Reset values to saved session settings

Restore values to application defaults

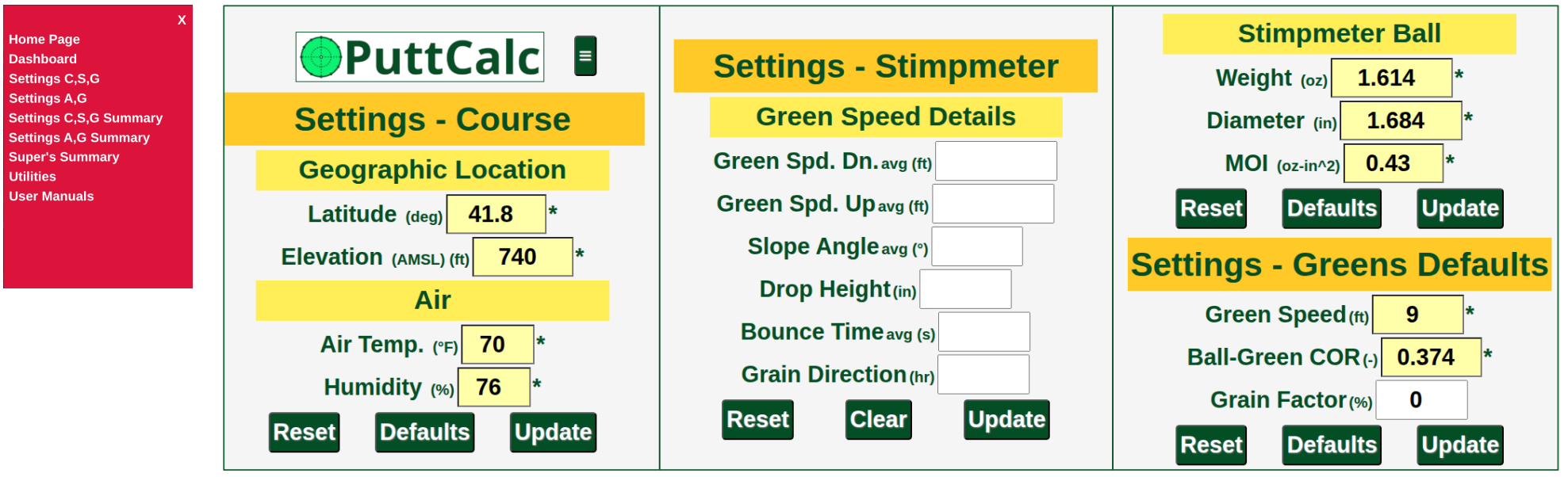
Store new values for current session

Clear input value(s)

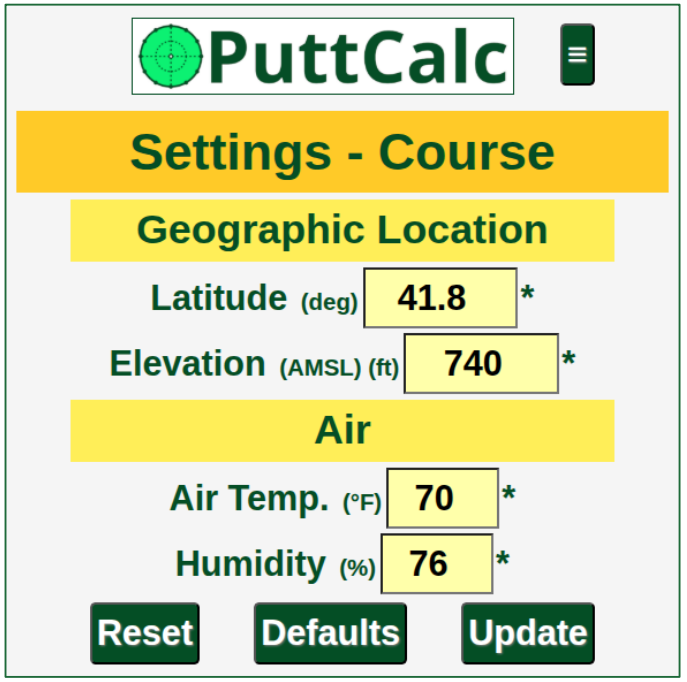
Copy result value to clipboard

Link to navigation menu

Settings C,S,G



Settings - Course

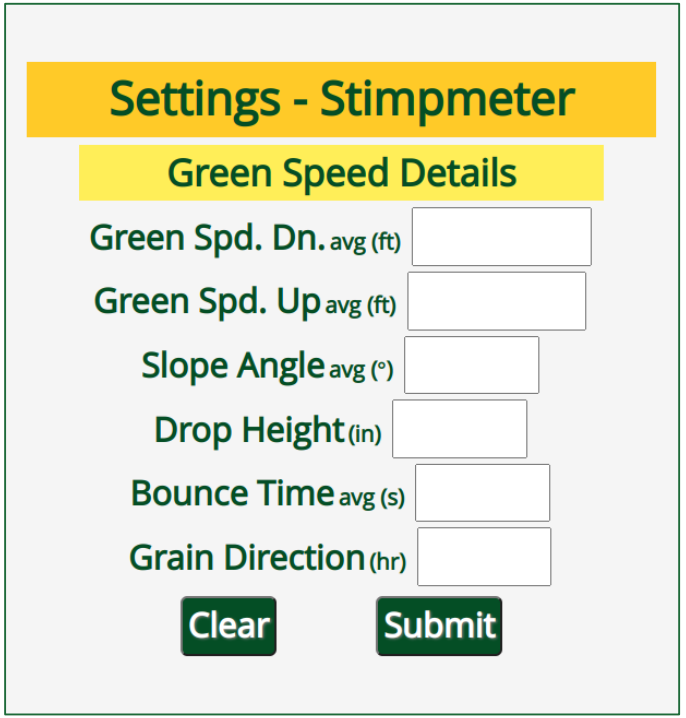


Geographic Location data is used for gravity and air density calculations. This information can be found on maps, map apps, or a website like:

www.freemaptools.com/elevation-finder.htm

Temperature and humidity are used for air density calculations, and can be found on some weather websites, and sometimes also using certain handheld weather meters, such as the one shown.

Settings - Stimpmeter



If you have a Stimpmeter, and the opportunity to take data using it, PuttCalc will use the data inputs shown to calculate the green speed (stimp), a more precise value for the coefficient of rolling friction, and, if applicable, a value for the Grain Factor, which indicates the strength of the grain.

For gathering this data, please see Appendix A on how to use the Stimpmeter Data Sheet, that was created for puttcalc.com.

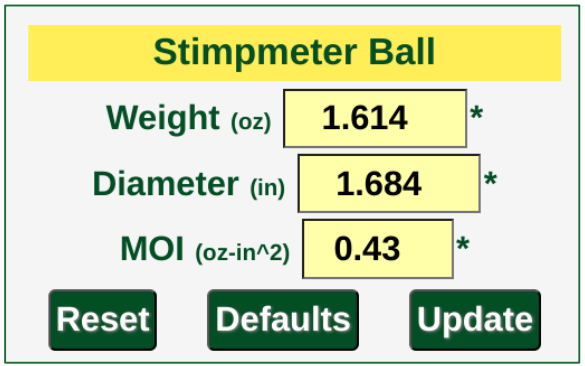
For instructions on how to measure ball-green bounce data (Drop Height, Bounce Time), please See Appendix B.

Entering -1 into Drop Height or Bounce Time will skip Ball-Green COR calculation. The default COR setting will be used.

Entering -1 into Grain Direction will ignore grain effects in the Stimpmeter calculation.

Additional data regarding the ball used for recording Stimpmeter data is explained on the next page.

Stimpmeter Ball Settings



The data on the Stimpmeter Ball shown on the left is also used in the calculations involving Stimpmeter data.

Sometimes, you can find data on golf ball weight and diameter in online golf ball reviews. Or, you can also measure them yourself using a jewelry scale and calipers.

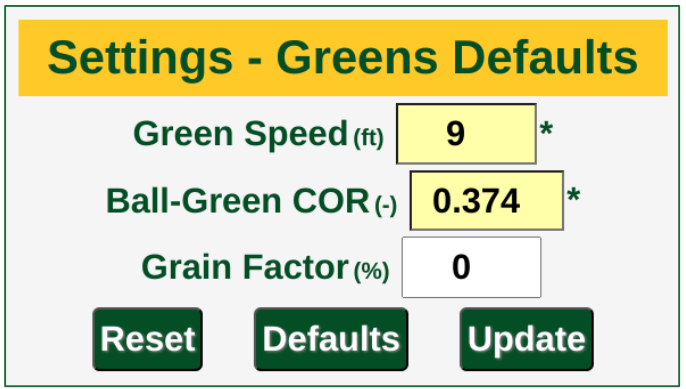
For a method for estimating the moment of inertia (MOI) of a golf ball, please see the next page.

Golf Ball MOI Estimation

- Golf ball moment of inertia (MOI) values are usually not available (it would be nice if ball manufacturers start providing that). To estimate:
  - Find the Spin Rating for your ball on the USGA's Conforming Golf Ball List:
    https://www.usga.org/ConformingGolfBall/gball_list.pdf
  - Then, use the first letter of the spin rating (i.e., the driver spin rating) to estimate MOI:
    - H: 0.41 (oz-in^2)
    - M: 0.43 (oz-in^2)
    - L: 0.45 (oz-in^2)
- MOI is related to the radial distribution of mass.

source: www.todays-golfer.com

Settings - Greens Defaults



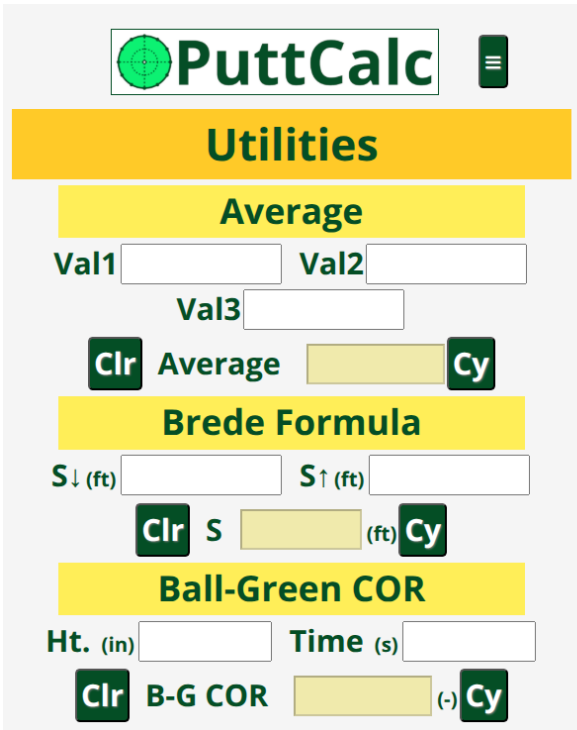
If you don't have Stimpmeter data, the initial default green speed is 9, as shown, but you can change it to another value - perhaps one provided by the course.

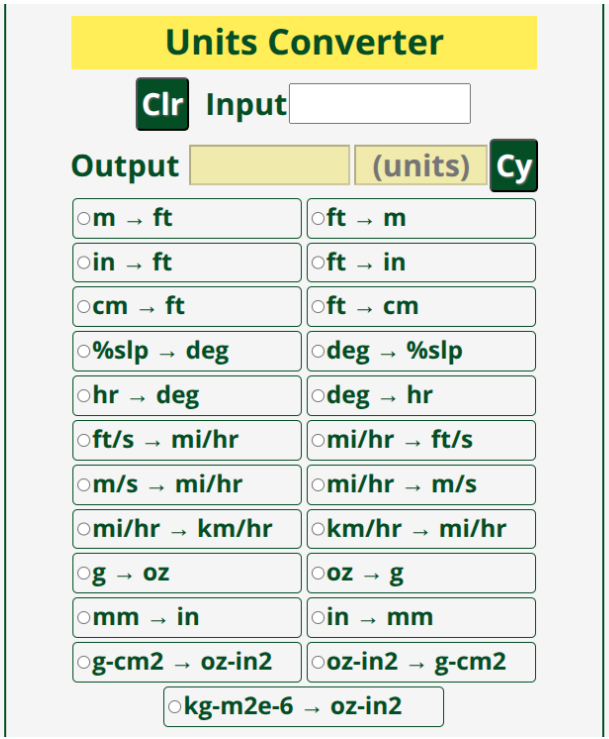
The initial default Ball-Green COR value is shown in the image on the left. This is a medium firmness value intended for general use. If you have another value, then you can enter it into the field shown (then click Update). Also, if you enter drop height and bounce time data into Green Speed Details, for a stimpmeter calculation, then Ball-Green COR will be calculated, and that value will become the default value. Alternatively, you can calculate Ball-Green COR using the Ball-Green COR calculator on the Utilities page.

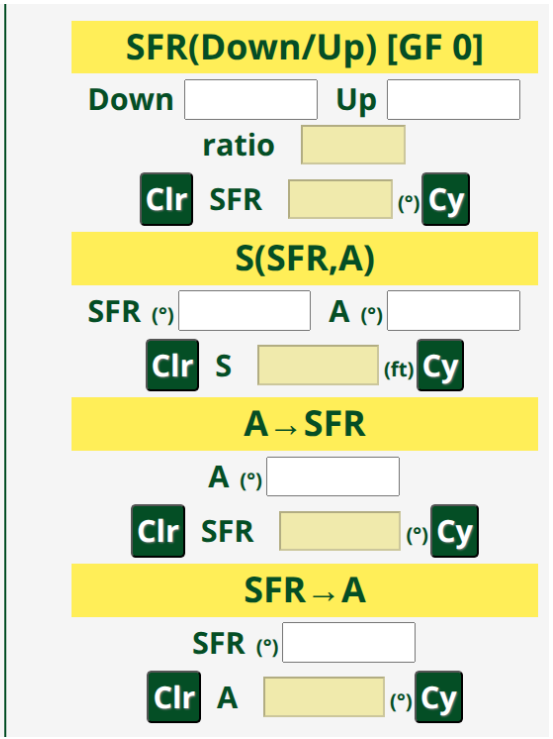
Grain Factor, which is the percent change in the coefficient of rolling friction, is a new term. It is calculated from detailed Stimpmeter data. If you don't have that data, but you want to add a grain factor based on experience, then you can enter it here.

Utilities

The Utilities page can help you prepare data for Settings C,S,G, and calculate SFR-related values (see book). Hover cursor on page for tips.







Settings C,S,G Summary

x
Home Page
Dashboard
Settings C,S,G
Settings A,G
Settings C,S,G Summary
Settings A,G Summary
Super's Summary
Utilities
User Manuals

PuttCalc Settings C,S,G Summary

Settings C,S,G Timestamp		
2026-02-22_T21:35:20_CST		
Course		
Latitude	41.8	°
Elevation	740	ft
Air Temp.	70	°F
Humidity	76	%
Stimpmeter Ball		
Weight	1.614	oz
Diameter	1.684	in
MOI	0.43	oz-in^2

Stimpmeter - Green Speed Details		
Green Spd. Dn. avg		ft
Green Spd. Up avg		ft
Slope Angle avg		°
Drop Height		(in)
Bounce Time avg		(in)
Grain Direction		hr
Greens Defaults		
Green Speed	9	ft
Ball-Green COR	0.374	-
Grain Factor	0	%

Current? (refresh page) Yes

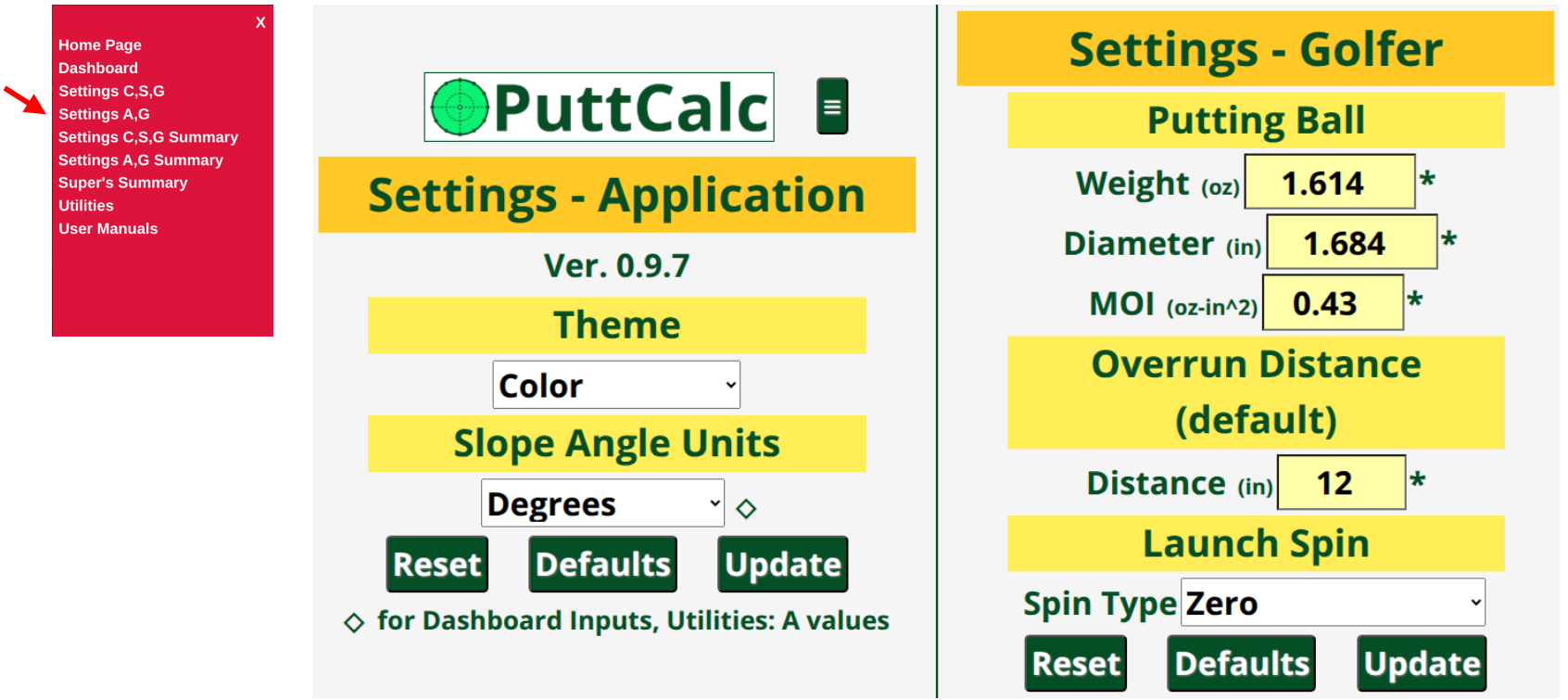
If you see this:

Current? (refresh page) No

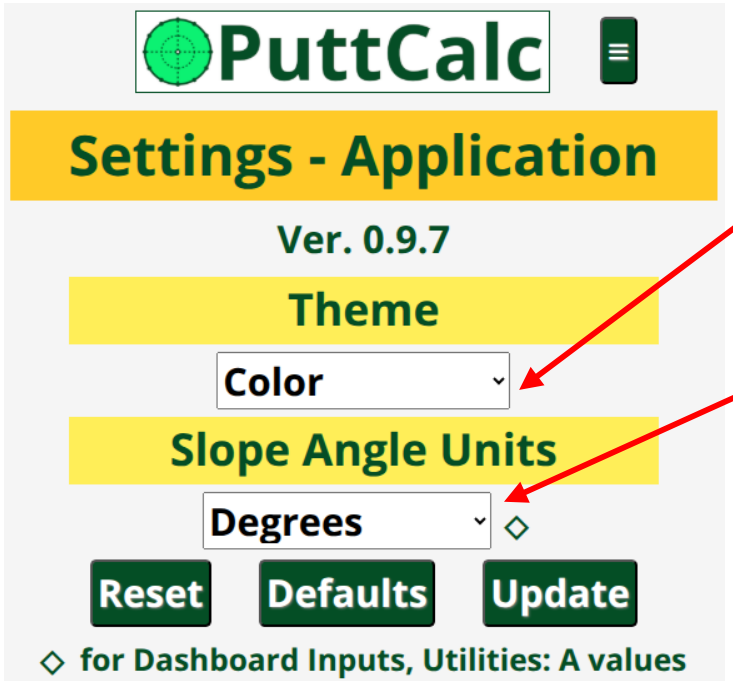
Update **settings per displayed values**

then see the explanation on the Settings A,G Summary page.

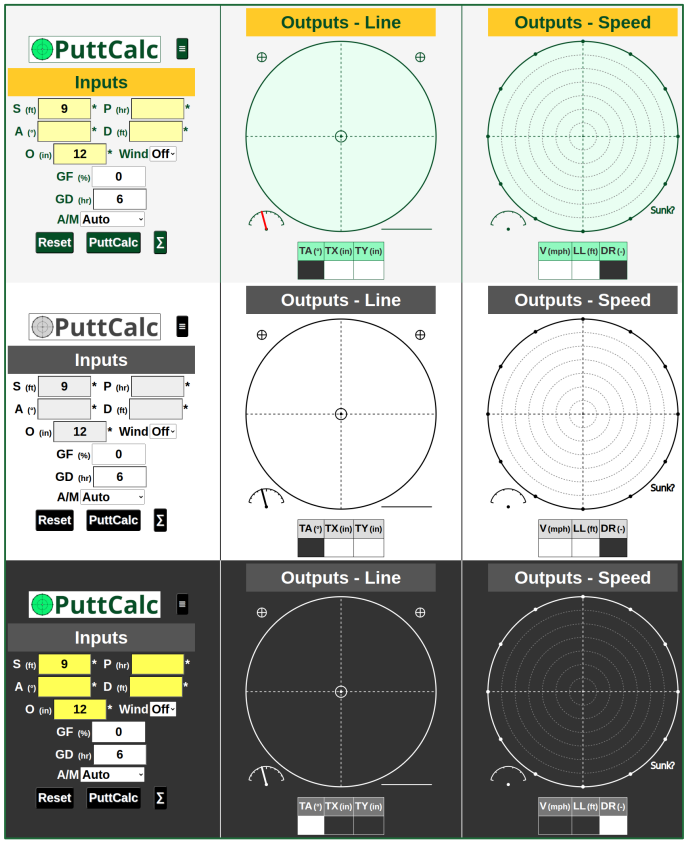
Settings A,G


X
Home Page
Dashboard
Settings C,S,G
Settings A,G
Settings C,S,G Summary
Settings A,G Summary
Super's Summary
Utilities
User Manuals
PuttCalc
Settings - Application
Ver. 0.9.7
Theme
Color
Slope Angle Units
Degrees
Reset
Defaults
Update
◇ for Dashboard Inputs, Utilities: A values
Settings - Golfer
Putting Ball
Weight (oz) 1.614 *
Diameter (in) 1.684 *
MOI (oz-in^2) 0.43 *
Overrun Distance (default)
Distance (in) 12 *
Launch Spin
Spin Type Zero
Reset
Defaults
Update

Settings - Application

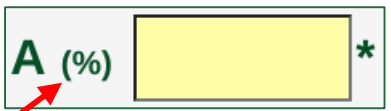


Example themes:



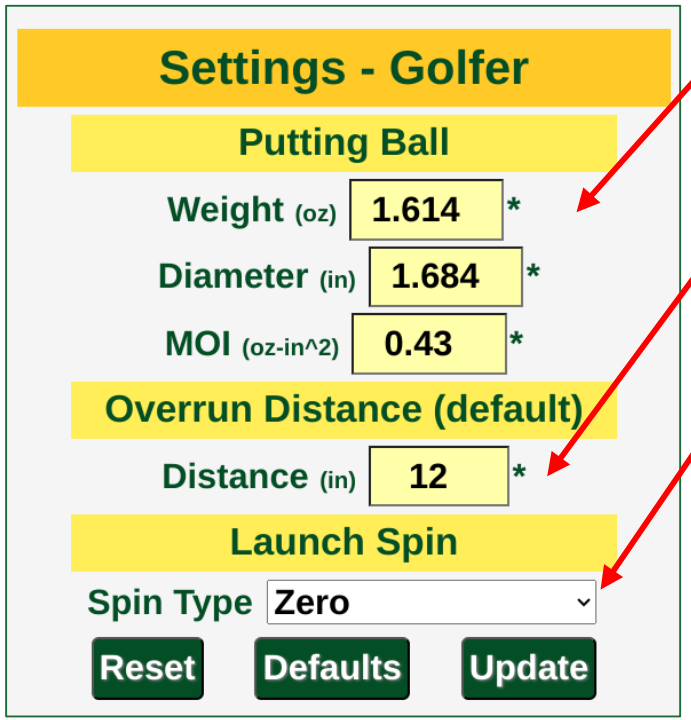
Theme choices:
- Color
- Black & White
- Dark

Slope Angle Units choices:
- Degrees
- Percent Slope



Percent Slope units on Dashboard

Settings - Golfer



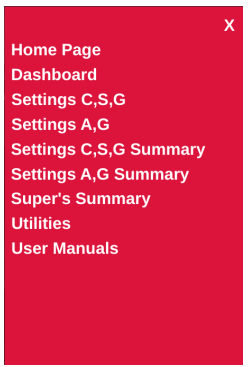
Putting Ball:
The same comments for Stimpmeter Ball Settings apply to the Putting Ball settings.

Overrun Distance (default):
The distance that the ball would roll past the far side of the hole if the hole wasn't there to capture the ball.

Launch Spin type choices:
- Zero
- Topspin
- Backspin
- Rolling (test only) [Does not apply to the use of a putter.]

Topspin and Backspin spin rates at launch are algorithmically determined by the application, based on the launch speed, which varies by putt.

Settings A,G Summary



PuttCalc Settings A,G Summary

Settings A,G Timestamp		
2024-09-12_T06:49:26_CDT		
Application		
Theme	Color	
Slope Angle Units	Degrees	
Golfer		
Ball - Weight	1.614	oz
Ball - Dia.	1.684	in
Ball - MOI	0.43	oz-in^2
Overrun Dist.	12	in
Spin Type	Zero	

Current? (refresh page) Yes

If you see this:

Current? (refresh page) No

Update **settings per displayed values**

then if you want to make all the settings shown on the summary page to be the currently saved session settings, then click Update, and then close the summary page. If needed, a new summary page can then be opened from the navigation menu, which will show the current settings.

Super’s Summary

PuttCalc Super's Summary

Timestamp *		
2026-03-15_T17:53:31_CDT		
Values		
Green Speed	9	ft
Grain Factor	0	%
Conf. Slope L	2.54 [4.43]	° [%]
Conf. Slope PC **	2.56 [4.48]	° [%]
Air Density	1.177	kg/m^3
Crit. Wind Spd.	33.3 [53.5]	mph [kph]
Ball-Green COR	0.374	–
Rolling Friction	0.07560	–
Gravity Ratio	0.9996	–

The values in this summary are based on the values of the Course, Stimpmeter, and possibly Greens - Defaults, settings stored at the timestamp shown.
*** Same as Settings C,S,G Timestamp**
**** Includes Grain Factor**

Current? (refresh page) Yes

Explanations:

Green Speed, GS, Stimp
Grain Factor, GF, 1% change in MuR
Conf. Slope L., CSL, Conforming Slope - Lemons (2008)
Conf. Slope PC., CSPC, Conforming Slope - PuttCalc (varies w/ settings)
Air Density, ρ, Rho, "row"
Crit. Wind Spd., WScrit, Critical Wind Speed
Ball-Green COR, BG-COR, Coefficient of Restitution
Rolling Friction, MuR, "mew-R", Coefficient of ...
Gravity Ratio, GravR, local / standard gravity

If the Grain Factor value is negative, or if it is greater than the Grain Factor Input limit (24), then please recheck the accuracy of the Stimpmeter data used in the Green Speed Details calculation - especially the speed and slope angle measurements.

Limits of Settings – C,S,G

Limits of Settings C,S,G for PuttCalc	Default	Min.	Max.	Notes
Settings				
Course				
Geographic Location				
Latitude (decimal degrees)	41.8	-70.00	70.00	Decimal degrees
Elevation (AMSL) (ft)	740	-1400	14000	Integer (Above Mean Sea Level)
Air				
Air Temperature (°F)	70	-20	120	Integer
Humidity (%)	76	0	100	Integer
Stimpmeter				
Green Speed Details				
Green Speed, Downhill, avg (ft)		2.000	62.000	
Green Speed, Uphill, avg, (ft)		1.000	17.000	
Slope Angle, avg (°)		0.000	4.000°	
Drop Height (in)		-1, or 12.000	48.000	-1 to ignore and use Ball-Green COR setting instead
Bounce Time, avg (s)		-1, or 0.084	0.584	
Grain Direction (hr)		0.000	12.999*	-1 to ignore; *disallow 2-4, 8-10
Stimpmeter Ball				
Weight (oz)	1.614	1.5000	1.7000	USGA/R&A Rules: 1.620 max
Diameter (in)	1.684	1.6000	1.8000	USGA/R&A Rules: 1.680 min
Moment of Inertia (MOI) (oz-in^2)	0.43	0.3520	0.5260	see settings user manual
Greens Defaults				
Green Speed (ft)	9	5.000	15.000	
Ball-Green COR (-)	0.374	0.120	0.800	Coefficient of Restitution (combined)
Grain Factor (%)	0	0.00	24.00	

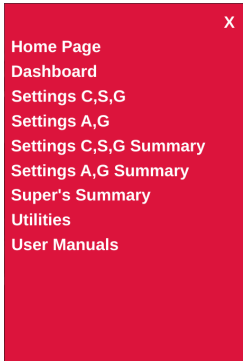
Limits of Settings – A,G

Limits of Settings A,G for PuttCalc	Default	Min.	Max.	Notes
Settings				
Application				
Theme	Color	Color, or Black & White, or Dark		
Slope Angle Units	Degrees	Degrees, or Percent Slope		
Golfer				
Putting Ball				
Weight (oz)	1.614	1.5000	1.7000	USGA/R&A Rules: 1.620 max
Diameter (in)	1.684	1.6000	1.8000	USGA/R&A Rules: 1.680 min
Moment of Inertia (oz-in^2)	0.43	0.3520	0.5260	see settings user manual
Overrun Distance				
Distance (in)	12	-3.000	24.000	Only used in Auto mode
Launch Spin				
Spin Type	Zero	Zero, or Topspin, or Backspin, or Rolling (test only)		

Appendix A:

How to Use the Stimpmeter Data Sheet

Stimpmeter Data Sheet



Stimpmeter Data												
By				Units	Slope: ° %		Distance: cm in ft				puttcalc.com	
Location						Notes						
Data Set	1		2		3		4		5		6	
Date												
Notch												
Drop Height												
Bounce Time 1												
Bounce Time 2												
Bounce Time 3												
Time Avg.												
Grain Dir.												
Slope Angle 1												
Slope Angle 2												
Slope Angle 3												
Slope Avg.												
Slope Dir.	Down	Up	Down	Up	Down	Up	Down	Up	Down	Up	Down	Up
Dist. Ball 1												
Dist. Ball 2												
Dist. Ball 3												
Dist. Avg.												
Convert to (ft)												
× 2 (if Notch 2)												
Brede (ft)												

The image on the left can be reproduced on sheets of paper, for recording hand-written Stimpmeter data collected on the green(s).

This data sheet is also available as a download at puttcalc.com/manuals, which is linked in the navigation menu, as shown on the left.

The sheet provides for six data sets. One data set is one complete set of Stimpmeter data. The data sheet can be used for multiple data sets on the same green, or on different greens, and/or on different dates.

The Utilities page at puttcalc.com/utils can be used for calculating averages, as well as the Brede value (see Appendix C).

Stimpmeter Data - Example Tools

For measuring slope Angle:

For finding Fall Line:

The Fall Line will be a straight putt.

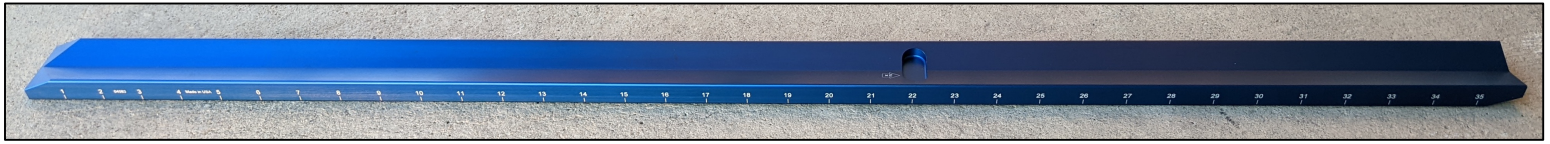
Or phone apps for both measurements

Appendix B:

How to Record and Measure Ball-Green Bounce Data

Drop Height

- Drop three golf balls, one at a time, from a known height (min: 12”, max: 48”) onto the green – high enough so that at least two distinct bounces can be seen and heard. Perform these drops on a nearly level surface of the green. Record the sounds of the bounces using an app on your mobile device.
- A convenient height would be to stand erect, with the arm holding the ball hanging straight down at your side. Measure the distance from the bottom of the ball to the green surface.
- If the green isn’t firm enough to cause a second bounce, try raising the ball higher to a known height, such as belt (hip) or chest height.
- Another option is to use an upright Stimpmeter (36”) for the drop height.



- Write down the drop height value in inches.

Recording the Bounce Sounds

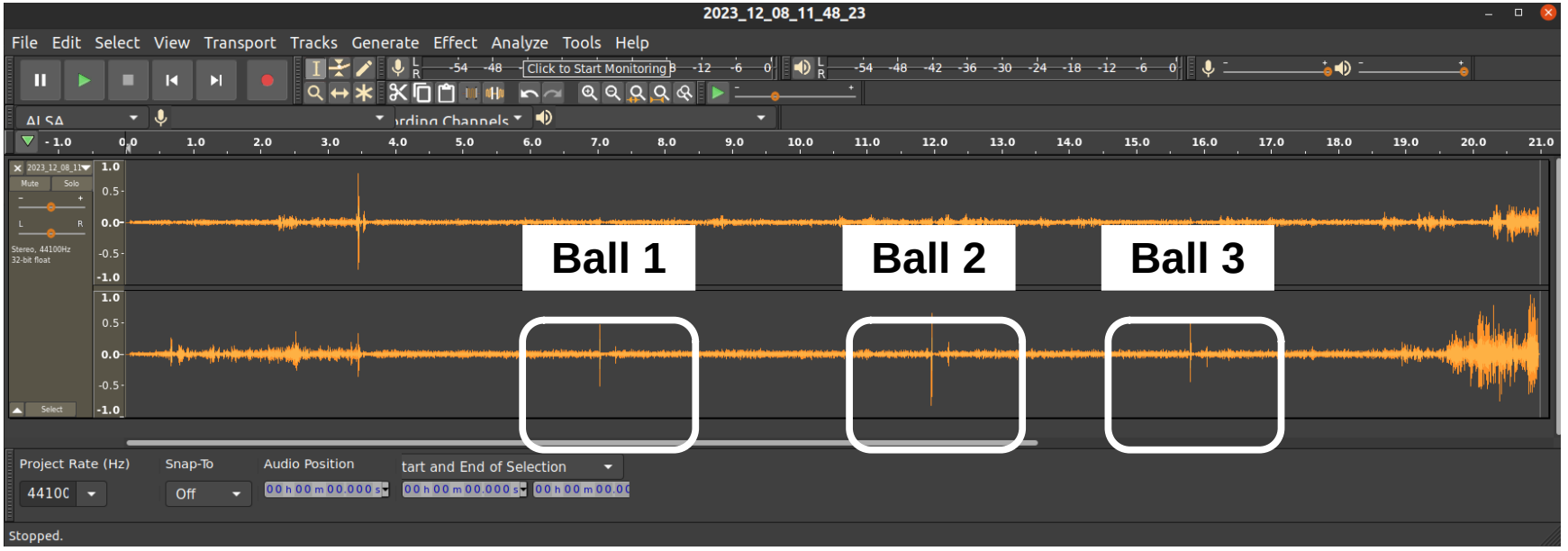
- The sounds of the first two bounces of each ball need to be captured using a mobile device audio recording app.
  - Example recording apps:
    - Android: *ASR – Another Sound Recorder,* by NLL APPS
    - iPhone / iPad: (maybe; not tested)
      - *Voice Record Pro,* by Dayana Networks Ltd
      - *Voice Recorder & Audio Editor,* by TapMedia Ltd
  - Also, see next page for an app that can both record and measure sounds.
- Start the recording on your device (e.g., smartphone), and place it on the green in a near-level location. One at a time, drop three balls onto the green close to the device. Then, stop the recording. It can be done in a minute.

Measuring the Bounce Sounds

- The time between the sounds of the first and second bounces must be measured accurately. This can be done by:
  - 1) Export the sound recording to an audio editor for measurement.
    - Laptop/desktop (Win/Mac/Linux):
      - *Audacity* , www.audacityteam.org
      - Measures to 0.001s
  - 2) Use an app to both record and measure.
    - Mobile (Android, iOS, Kindle) and laptop/desktop (Win/Mac):
      - *WavePad Audio Editor,* www.nch.com.au/wavepad/
      - Measures to 0.01s

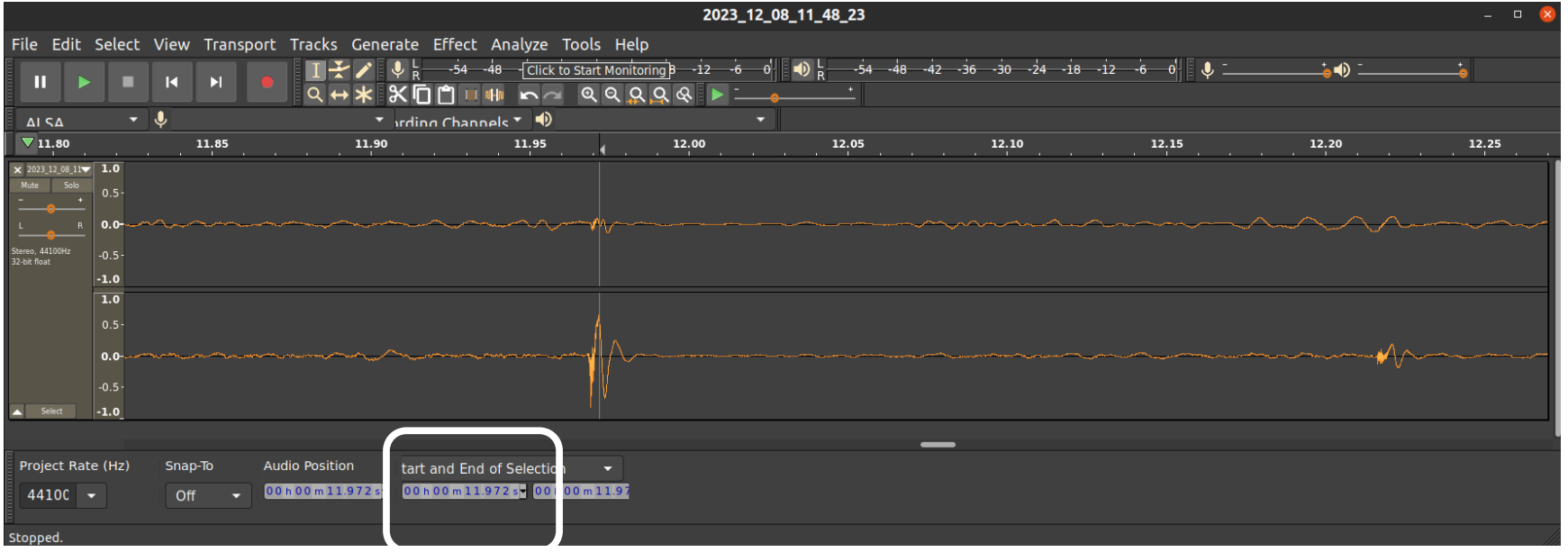
Example Measurement - 1

- Overall recording of three ball drops (viewed in Audacity):



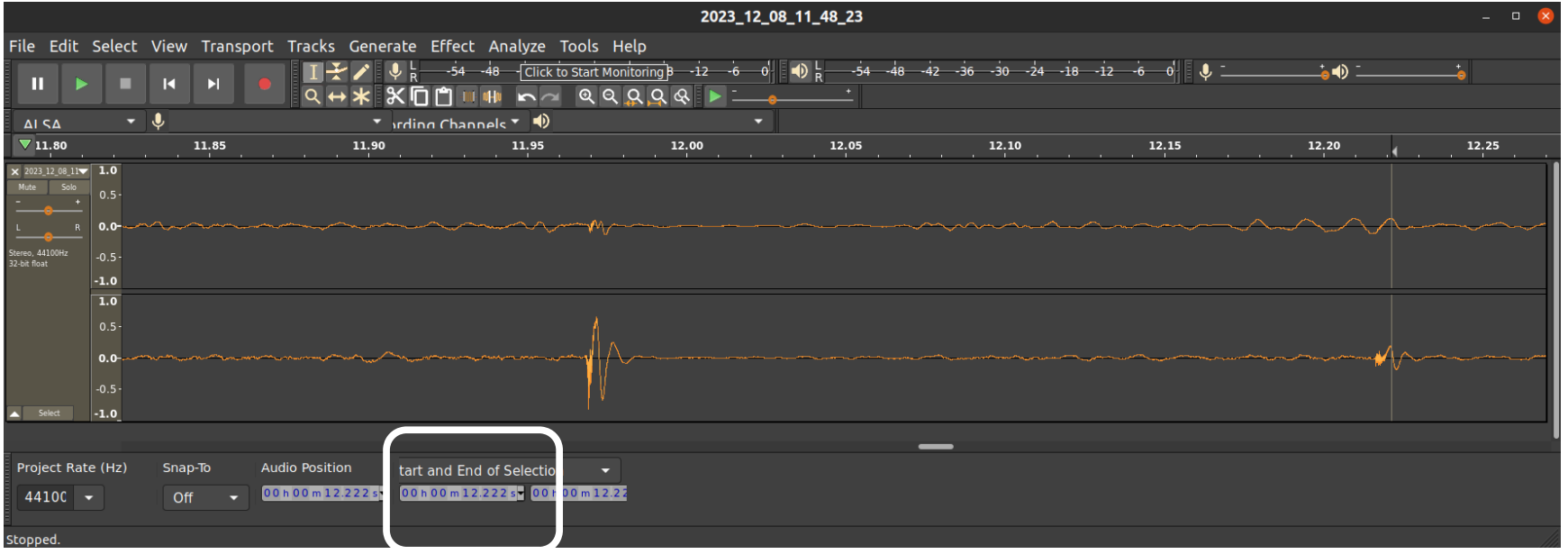
Example Measurement - 2

- Zoom in to measure a ball's bounce times, then select the peak (click on the graph) of the start of the bounce, and note the time below: 11.972 s



Example Measurement - 3

- Zoom in to measure the second bounce time, then select the peak of the end of the bounce, and note the time below: 12.222 s



Example Measurement - 4

- Calculate the difference in the two times (i.e., between bounces one and two for the same ball):

  12.222 – 11.972 = 0.250 s

- Repeat this process for the other two ball drops.
- Determine the average time for the three drops (from the same height).
  - This is the bounce time to be entered into the settings.

Appendix C:

Brede Equation

Brede Equation

- Green speed corrected for slope = $\frac{2 \times S\uparrow \times S\downarrow}{S\uparrow + S\downarrow}$ Brede (1990)

  Where: S↓ Stimpmeter downhill distance (average)
  S↑ Stimpmeter uphill distance (average)

- This is the harmonic mean of the two values.
  - Used in physics to find average speed over same distance.
  - https://en.wikipedia.org/wiki/Harmonic_mean#Examples
- If both speeds are the same, and then the arithmetic and harmonic means are the same.
- PuttCalc uses this equation internally.
- There is a Brede Formula calculator on the Utilities page.

Appendix D:

Tools

Tools

- ***Basic***
- Stimpmeter (USGA) (for green Speed)
- Golf balls, tees (for Stimpmeter)
- Tape measure (for Distance)
- Clipboard or notebook
  - Stimpmeter Data Sheet
- Round bubble level (for Fall Line)
  - 80mm (preferred) or 60mm diameter
- Digital level (for slope Angle)
- Protractor (for clock Position)

- ***Advanced***
- Ball spinner (for straight roll equator)
- Base plate (for digital level)
- Mobile phone (for recording bounces)
- Audio software (installed or online) (for bounce times for BG-COR)
- Jewelry scale (for golf ball Weight)
- Calipers (for golf ball Diameter)
- Weather meter (for Wind Speed, and perhaps Temperature, Humidity, Elevation) (or find online)

Legal

- Please refer to puttcalc.com/legal.