

PVSYST SA TUTORIAL

PVsyst 7

3D Procedures Ground & Topography



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INTRODUCTION

This document is a help following your request for support.

The complete reference manual for PVsyst is the online help that is accessible from the program through the "Help" entries in the menus, by pressing the F1 key or by clicking on the help icons 🕐 inside the windows and dialogs.

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1: Importing a ground topography from Google Earth

- Open Google Earth Pro (this software is free even if it's called "Pro")
- From the menu "Tools>Options>Navigation", check "Do not automatically tilt while zooming" (in order to be always in a 90° top view from the ground)
- Select a location by setting and address or by scrolling with the mouse
- Click on the "Path" tool and draw as many points as possible with the mouse to define the desired area (the polygon tool will only generate the elevation data for the polygon's corners, it's not sufficient to extract the topography of the polygon area)



• On "Altitude tab", select "Ground level"

Figure 1 : Google Earth Pro

• Click on "OK" to close the path tool



• Select the generated path and save it as a KML file :



Figure 2 : google earth - Save as

- Go to <u>https://www.gpsvisualizer.com/convert_input</u>
- Select "Plain text" as "Output format"
- Select your KML file from "Upload your files here"
- Select "Semi-colon" for "Plain text delimiter"
- Select "Best available source" in "Add DEM elevation data" list

Output format:	● Plain text ○ GPX ○ <u>Google Earth KML</u>	
Upload your files here:	File #1 Sélect. fichiers location.kml ×	Convert
(10 MB max. total size, zin/ az is supported)	File #2 Sélect. fichiers Aucun fichier choisi X	
	File #3 Sélect. fichiers Aucun fichier choisi X	
	Show more file boxes	
Or paste your data here:	name,desc,latitude,longitude	
	Force text data to be this type: default	
Or provide the URL of a file	on the Web:	
of provide the one of a me		
Plain text delimiter:	semi-colon 💙 Plain text output units: Metric 💌	
Add estimated fields:	speed heading slope (%) distance VMG	pace
Add DEM elevation data	hert available course	
Add DEIN elevation data.		
	Save these settings • Load from saved	

Figure 3 : Google earth - Output format



- Click on "Show advanced parameters"
- Select "No" for "Repeat header row in plain-text output"
- Select "Yes" for "Output UTM coordinates"

Misc. Ontions
Repeat header row in plain-text output No 💙 If no, a "new_track" field will be used)
Output UTM coordinates: Yes 🗸 in plain-text output only)
Time offset: hours 🕅
Moving average range for estimated fields (speed, slope, etc.): 1 point(s)
Check this box if your GPX input file uses the wrong unit (km/h) for speed data: 🗌 🛙

Figure 4 : Misc. Options

- Click on "Convert"
- Copy the generated content

pe:latitude:longitude:utm zone:utm easting:utm northing:altitude (m):name:desc	
44.364489382;3.870649091;31T;569374.8;4912725.7;1437.1;Sans titre - Trajet;	
44.364472991;3.870588669;31T;569370;4912723.9;1438.4;;	
44.364468877;3.870533200;31T;569365.6;4912723.4;1439.5;;	
44.364460992;3.870499121;31T;569362.9;4912722.5;1440.1;;	
44.364453448;3.870461007;31T;569359.9;4912721.6;1440.7;;	
44.364453612;3.870456815;31T;569359.6;4912721.6;1440.8;;	
44.364445267;3.870435609;31T;569357.9;4912720.7;1441.2;;	
44.364425931;3.870372310;31T;569352.9;4912718.5;1442.1;;	
44.364414733;3.870338587;31T;569350.2;4912717.2;1442.6;;	
44.364409141;3.870321745;31T;569348.8;4912716.6;1442.8;;	
44.364406322;3.870313318;31T;569348.2;4912716.2;1443.0;;	

Figure 5 : Google Earth - Data format

• Past the content to Excel



• Click on menu "Data>Convert" and select "Delimited" file

Fichier Accueil Insertion Mise en page Formules Données Révision Affichage Automate Aide	
B A partir du web B Sources récentes Obtenir des A partir du web Connées v A partir du veb B A partir de Tableau ou d'une Plage Connexions existantes Récupérer et transformer des données Réquites et connexions	rertir Svalida
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11 T.44.364409 41:3.870321745:31T:569348.8:4912716.6:1442.8:	
12 T:44.364406; 22:3.870313318:31T:569348.2:4912716.2:1443.0:: Apercu des données sélectionnées :	
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16 T;44.364386514;3.870241931;31T;569342.5;4912714;1443.7;;	
17 T;44.364384 ^c 73;3.870221059;31T;569340.8;4912713.7;1443.9;; <	
18 T;44.364378{14;3.870195943;31T;569338.9;4912713.1;1444.0;;	
19 T;44.364370ć40;3.870166590;31T;569336.5;4912712.1;1444.2;; Annuler < Précédent	
20 T;44.364365i[24;3.870133234;31T;569333.9;4912711.5;1444.4;;	
21 T;44.364360 ¹ 32;3.870095781;317;569330.9;4912710.9;1444.7;;	

Figure 6 : Excel data

- Click on "Next" and select "Semi-colon" as delimiter, click on "Next"
- Remove the first 4 columns (from "type" to "utm_zone"), keep only columns "utm_easting", "utm_northing" and "altitude"

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3	569370	4912723.9	1438.4	
4	569365.6	4912723.4	1439.5	
5	569362.9	4912722.5	1440.1	
6	569359.9	4912721.6	1440.7	
7	569359.6	4912721.6	1440.8	
8	569357.9	4912720.7	1441.2	
9	569352.9	4912718.5	1442.1	
10	569350.2	4912717.2	1442.6	
11	569348.8	4912716.6	1442.8	
12	569348.2	4912716.2	1443	
13	569347.2	4912715.6	1443.1	
14	569345.2	4912715	1443.5	
15	569344.2	4912714.7	1443.6	
16	569342.5	4912714	1443.7	
47		4040740.7		

Figure 7 : Data

• Save as .CSV and close excel



 In PVsyst 3D scene, from the menu "File>Import>Import ground data (CSV)", select and import your file



Figure 8 : PVsyst - Import ground data

• Your topography should be correctly imported:



Figure 9 : PVsyst ground



Chapter 2: Converting an Autocad .DWG to .DAE from sketchup

- Open Sketchup Pro
- Click on "File>Import" and select an Autocad .DWG file
- Click on "File>Export>3D model"
- Select "Collada (*.DAE)" and save your file.
- In PVsyst 3D scene, from the menu "File>Import>Import a 3D scene (3DS, DAE,PVC)", select and import your file

Chapter 3: Importing a ground from sketchup

• Open Sketch Pro



on the Location toolbar or select

- Click the "Add Location tool" "File>Geolocation>Add Location".
- In the "Add Location" window that appears, type an address or intersection where your desired terrain is located.
- Click the "Search" button, and an aerial view of your location appears in the window.
- Click "Select Region" in the upper right.
- Drag the corners of the selection box to refine the location.
- Click the "Grab" button in the upper right, and your location's terrain is imported into your model as a layer.



Figure 10 : Sketchup Import ground



• In the layers list, make "Snapshot" layer invisible and "Terrain" layer visible :



Figure 11 : Location terrain

• Right click on the ground image and select "Unlock" then "Explode"



Figure 12 : Ground under Sketchup

- From menu "File>Export>3D model", save the terrain as ".DAE" file
- In PVsyst 3D scene, from the menu "File>Import>Import a 3D scene (3DS, DAE, PVC)", select and import your file
- Click on "OK" in the import dialog: your 3D object is imported in the 3D scene
- Right-click on it and select "Transform to a ground object"



Figure 13 : PVsyst - Transform to a ground object

