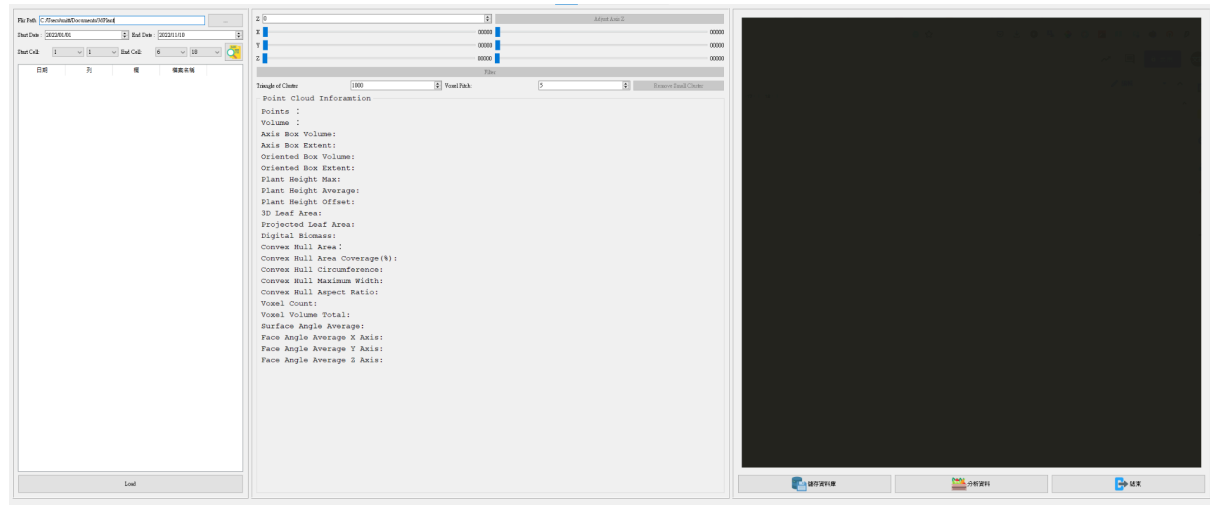


3D 屬性檢測程式操作手冊

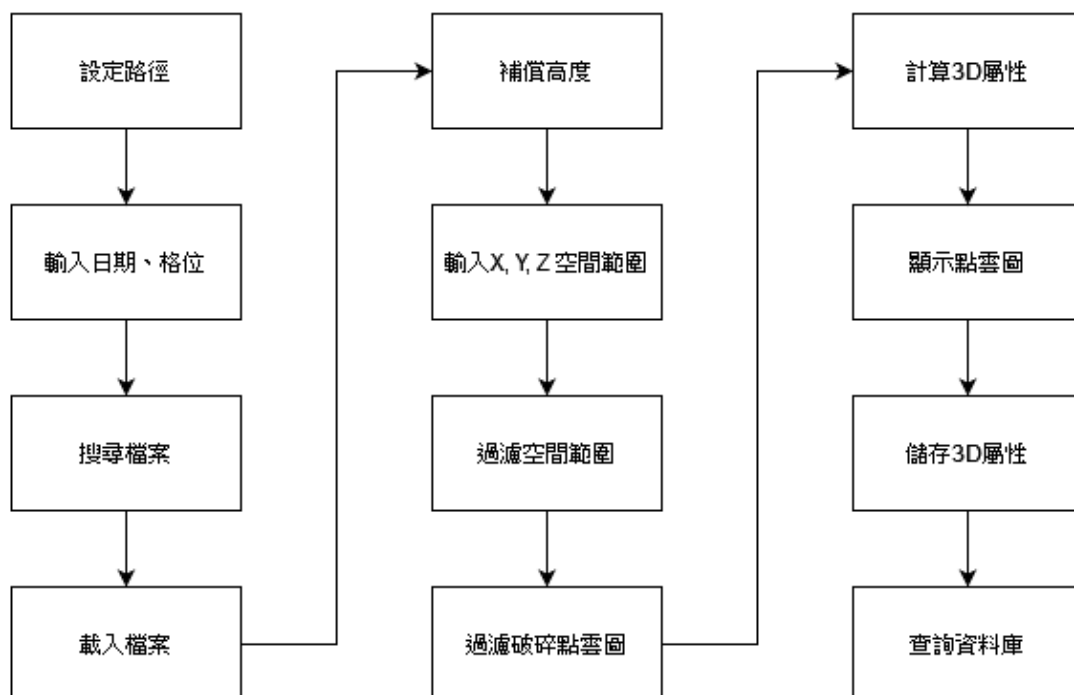
程式主畫面



程式功能說明

區域一	區域二	區域三
搜尋檔案 載入檔案	補償高度 依空間範圍過濾點雲圖 過濾掉破碎的點雲圖	顯示點雲圖 儲存資料庫 顯示資料庫資料

程式操作邏輯



1. File Path: C:/Users/unitt/Documents/3dPlant ...

Start Date: 2022/01/01 End Date: 2022/11/10

2. Start Cell: 1 1 End Cell: 6 18

3. [Search Icon]

	日期	列	欄	檔案名稱
1	20220628	03	09	20220628_105837_2_0309_65_point_cloud.ply
2	20220628	03	09	20220628_105837_2_0309_65_point_cloud_knot.ply
3	20220628	03	09	20220628_105837_2_0309_point_cloud.ply
4	20220713	01	05	20220713_135158_3_0105_75_point_cloud.ply
5	20220713	01	06	20220713_135249_3_0106_75_point_cloud.ply
6	20220713	01	07	20220713_135316_3_0107_75_point_cloud.ply
7	20220713	01	08	20220713_135423_3_0108_75_point_cloud.ply
8	20220706	01	04	20220706_220041_3_0104_55_point_cloud.ply
9	20220706	01	05	20220706_220123_3_0105_45_point_cloud.ply
10	20220706	01	06	20220706_220205_3_0106_25_point_cloud.ply
11	20220706	01	07	20220706_220253_3_0107_10_point_cloud.ply
12	20220706	01	08	20220706_220338_3_0108_85_point_cloud.ply

4. [Row 7 highlighted]

5. [Load Button]

1. 設定3D點雲圖檔案的根路徑
2. 設定檔案日期、格位
3. 按下搜尋按鈕
4. 選取所要處理的檔案
5. 按下載入按鈕

正確的3D檔案名稱的格式: 日期_時間_星期幾_格位_高度_point_cloud.ply

1

Z

0

Adjust Axis Z

2

X

00000

00000

Y

00000

00000

Z

00000

00000

3

Triangle of Cluster

1000

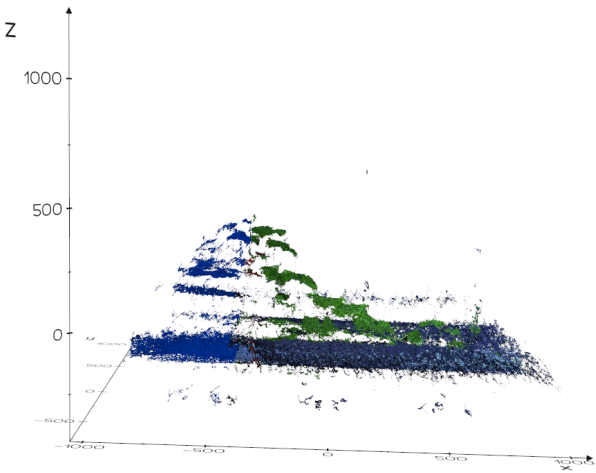
Voxel Pitch:

5

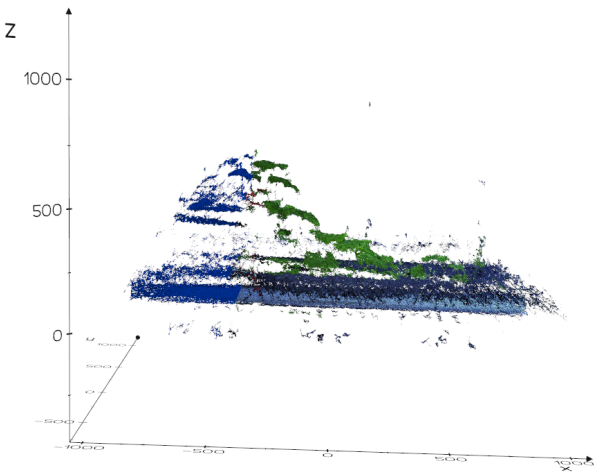
Remove Small Cluster

目前溫室的3D校正是在天車位置為75時進行的校正，天車位置會依照植物的高低而有所不同，因為需要進行高度位置的補償。

補償高度邏輯	
天車位置	補償高度
75	0
65	+100mm
55	+200mm
45	+300mm
35	+400mm
25	+500mm
15	+600mm
5	+700mm
0	+750mm



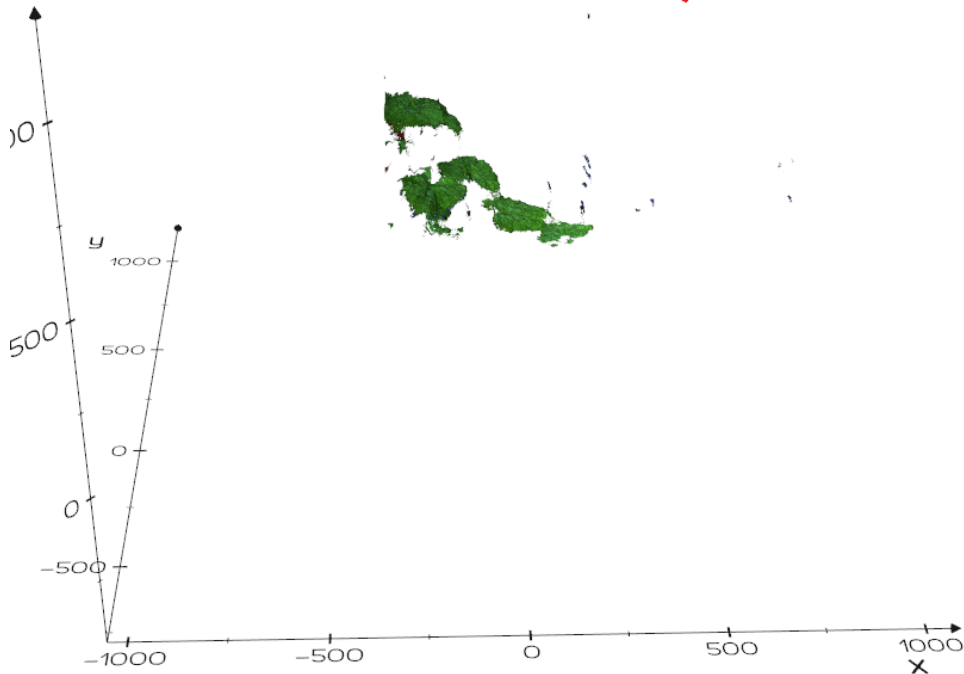
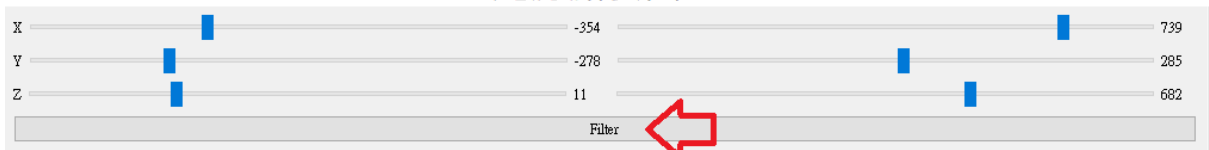
原始點雲圖



補償高度後的點雲圖

調整空間範圍

過濾點雲圖

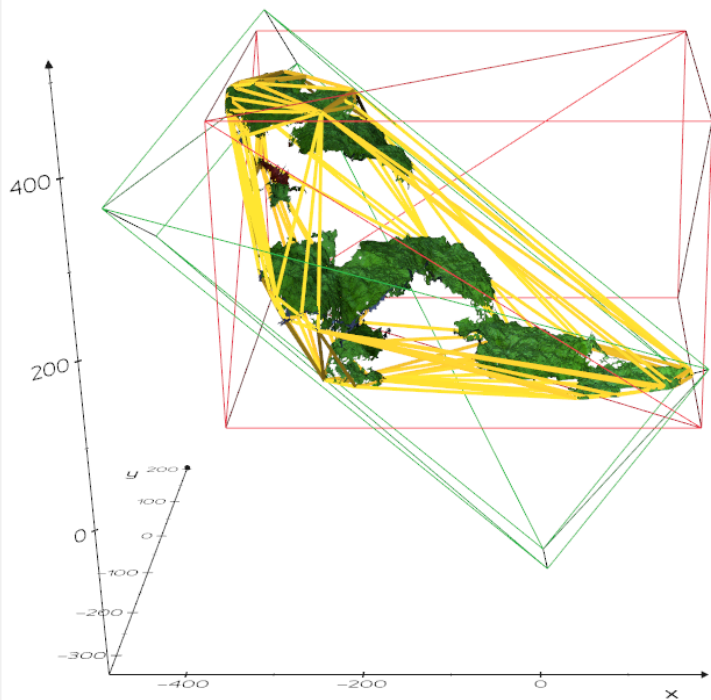


過濾破碎點雲圖

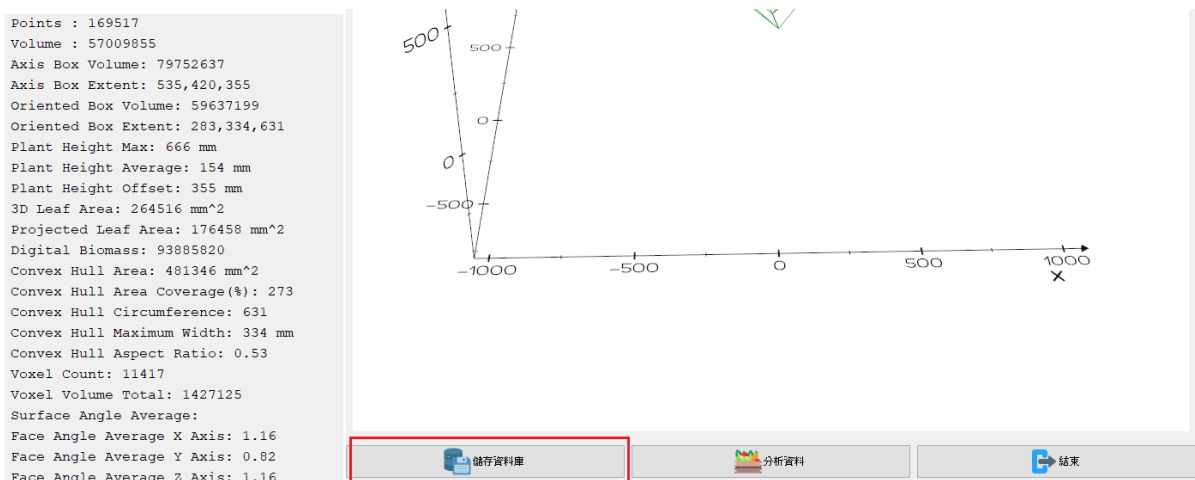
Triangle of Cluster: 1000 Voxel Pitch: 5 Remove Small Cluster

Point Cloud Information

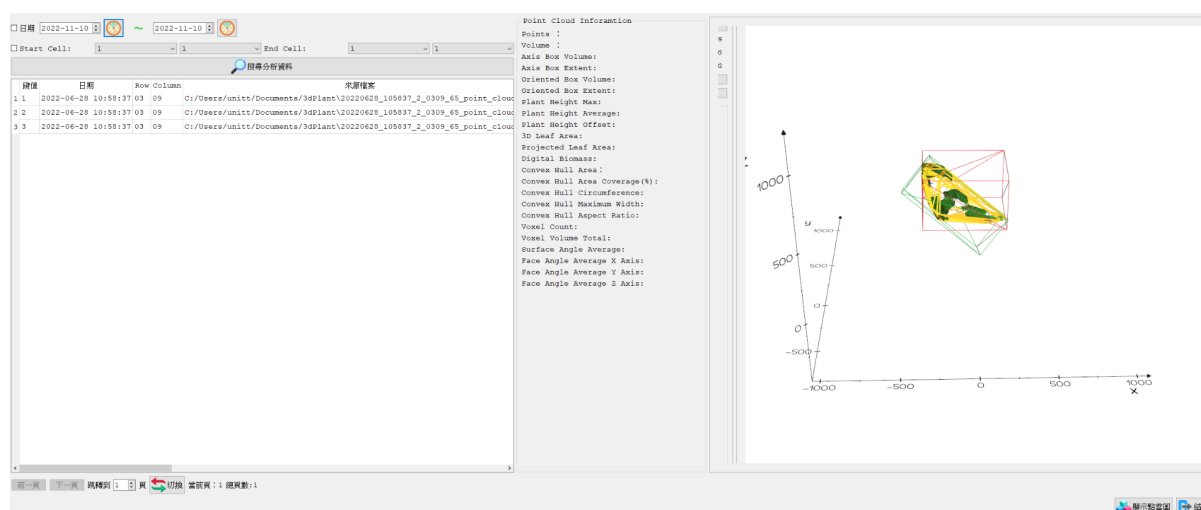
- Points : 169517.0
- Volume : 57009855
- Axis Box Volume: 79752636.67894572
- Axis Box Extent: 535,420,355
- Oriented Box Volume: 59637199.06262539
- Oriented Box Extent: 283,334,631
- Plant Height Max: 355.0 mm
- Plant Height Average: 154.0 mm
- Plant Height Offset: 0 mm
- 3D Leaf Area: 264516.0 mm²
- Projected Leaf Area: 176458.0 mm²
- Digital Biomass: 93885820.0
- Convex Hull Area: 481346.0 mm²
- Convex Hull Area Coverage(%): 273.0
- Convex Hull Circumference: 631
- Convex Hull Maximum Width: 334 mm
- Convex Hull Aspect Ratio: 0.53
- Voxel Count: 11417
- Voxel Volume Total: 1427125
- Surface Angle Average:
 - Face Angle Average X Axis: 1.16
 - Face Angle Average Y Axis: 0.82
 - Face Angle Average Z Axis: 1.16



當產生出3D屬性數據後，可以按下「儲存資料庫」按鈕進行儲存。



按下「分析資料」按鈕，顯示資料庫查詢畫面。



區域一	區域二	區域三
日期 格位 搜尋資料庫	3D屬性	點雲圖

☐ 日期: 2022-11-10  ~ 2022-11-10 

☐ Start Cell: 1 End Cell: 1

 搜尋分析資料

鍵值	日期	Row	Column	來源檔案
1	2022-06-28 10:58:37	03	09	C:/Users/unitt/Documents/3dPlant\20220628_105837_2_0309_65_point_cloud
2	2022-06-28 10:58:37	03	09	C:/Users/unitt/Documents/3dPlant\20220628_105837_2_0309_65_point_cloud
3	2022-06-28 10:58:37	03	09	C:/Users/unitt/Documents/3dPlant\20220628_105837_2_0309_65_point_cloud

前一頁 下一頁 跳轉到 1 頁  切換 當前頁: 1 總頁數: 1

 顯示點雲圖  結束

Point Cloud Inforamtion

Points : 169517.0

Volume : 57009855

Axis Box Volume: 79752636.67894572

Axis Box Extent: 535,420,355

Oriented Box Volume: 59637199.06262539

Oriented Box Extent: 283,334,631

Plant Height Max: 355.0 mm

Plant Height Average: 154.0 mm

Plant Height Offset: 0 mm

3D Leaf Area: 264516.0 mm²

Projected Leaf Area: 176458.0 mm²

Digital Biomass: 93885820.0

Convex Hull Area: 481346.0 mm²

Convex Hull Area Coverage(%): 273.0

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Convex Hull Maximum Width: 334 mm

Convex Hull Aspect Ratio: 0.53

Voxel Count: 11417

Voxel Volume Total: 1427125

Surface Angle Average:

Face Angle Average X Axis: 1.16

Face Angle Average Y Axis: 0.82

Face Angle Average Z Axis: 1.16

