

KOREA 2021

DISCOVERY SUMMIT

EXPLORING DATA
INSPIRING INNOVATION



Response analysis with wafermap using JSL

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Response analysis with wafermap using JSL

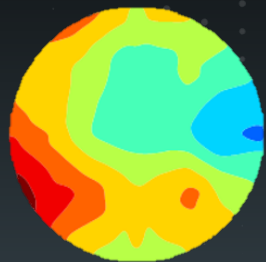
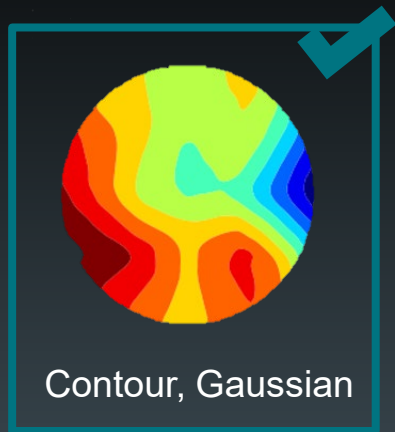
- Introduction
- Prediction using Gaussian process
- Interactive UI & Visualization
- Advantages of this Tool

Introduction

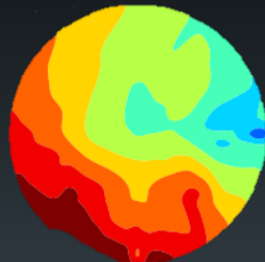


- Between each process, Have to check results if they are within specified range.
- Difficulty predicting when not enough points are taken

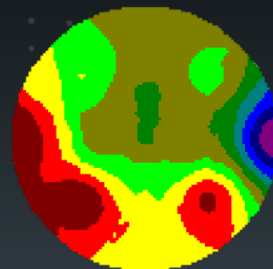
Prediction using Gaussian process



Contour, Neural



Contour, DOE(RSM)



Original



Highly measured part
→ Contour plot (JMP)

Less measured part
→ Gaussian Process (JMP)

Interactive UI & Visualization

Linked with Map, data

Show statistical data

Differences of each group

Monitoring - JMP Pro

Data Filter

Clear Favorites

Select Show Include

Inverse

desc (5)

1 49

2 49

3 49

4 49

AND OR

회전

반시계방향: 0°

Legend

Set Min: 499.65 Set level: 10

Set Max: 519.8

Points, Coordinates

X, Y Coordinate

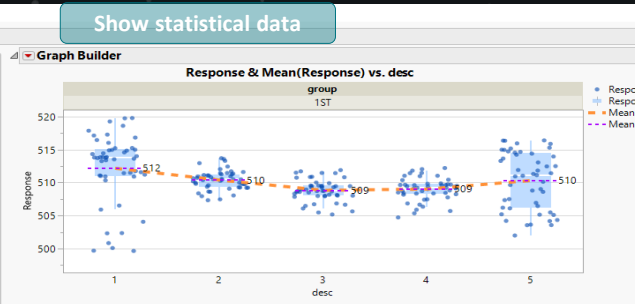
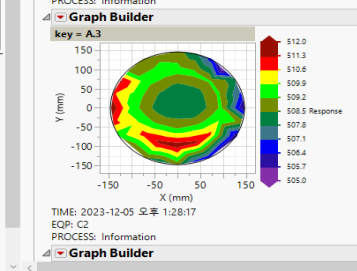
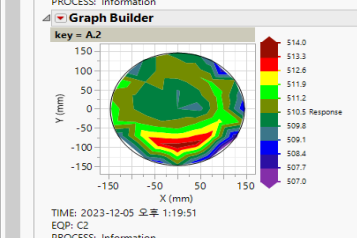
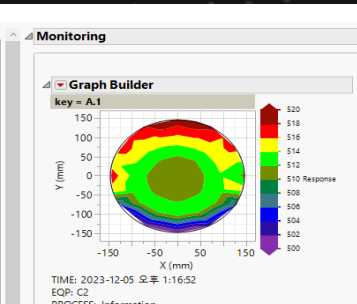
Y (mm) vs. X (mm)

Circle include Exclude

Gaussian, Pick specific points

Radius & X, Y

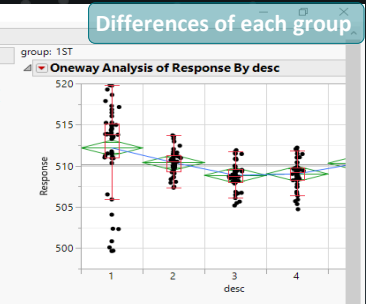
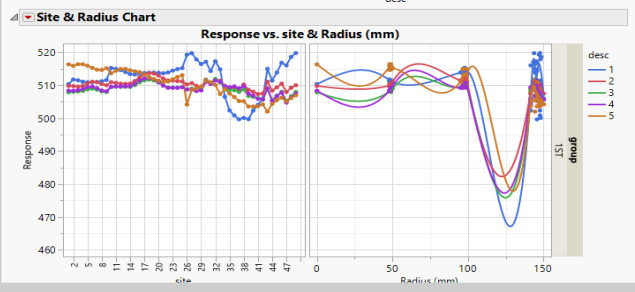
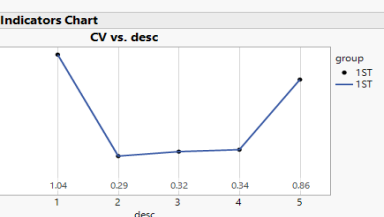
Site vs Radius & X, Y



Column Switcher

7 Columns

- Mean
- Std Dev
- Range
- Min
- Max
- CV
- Unit(%)



Oneway Anova

Summary of Fit

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Ratio	P
desc	4	332.0779	88.0195	7.9339	
Error	240	2655.8973	11.0662		
C. Total	244	3007.9752			

Means for Oneway Anova

Means Comparisons

Comparisons for all pairs using Tukey-Kramer

Confidence Quantile

q*	Alpha
2.74864	0.05

Connecting Letters Report

Level	Mean
1 A	512.18265
2 A B	510.40592
3 B	508.94959
4 B	509.02469
5 B	510.32612

Levels not connected by same letter are significantly different

Interactive UI & Visualization

- Change the angle & level of color

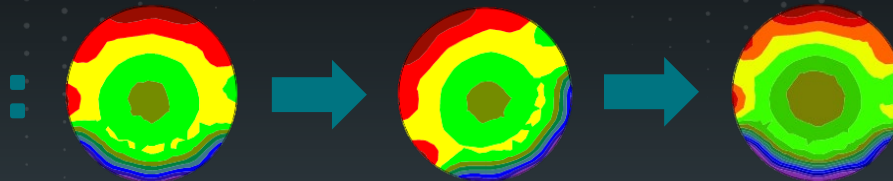
회전

반시계방향: 40 ° ▶ ◀

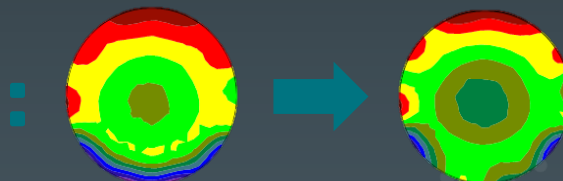
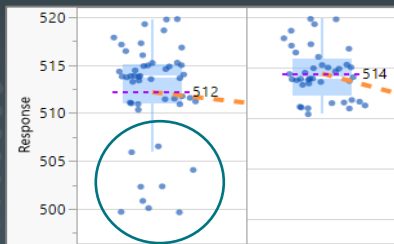
Legend

Set Min: 500 Set level: 15

Set Max: 520 ▶ ◀



- Exclude & Include specific points



Advantages of this Tool

- Fast, consistent analysis and prediction
- Interactive & User friendly window
- Handling data visually
- Provide statistical data

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Thank you

