

Exploring machining



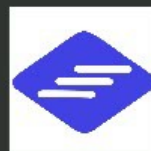
Tutorial kriging

"solution tree" analysis.



Economic Optimization

Evaluate your production from an economic viewpoint (service without additional tests). We determine the best cutting settings to reduce your production costs.



Production Optimization

Evaluate the productivity of your machining process and determine the optimal cutting parameters to increase your productivity.



D.O.E to improve machining

We guide you step by step to launch any type of design of experiment to improve any manufacturing process (grinding, design of cutting tools, etc.).



Statistical Analysis

If you are hesitating between various cutting conditions, we conduct statistical analyses to determine the best one.



Reduction of torque

We find the right machining conditions to reduce torsion in your parts.



Improvement of the roughness

We find the right cutting conditions to reduce roughness of your parts to a minimum.



Tool life

We find the right machining conditions to prolong the life of your tools.



Accuracy and vibrations

We guide you step by step to determine the origin of inaccuracies or signs of vibration in your machined parts.



Reduction of burr.

We find the right machining conditions to reduce burrs on your parts.



Kriging Interpolation

We predict new values and results based on trials you already conducted randomly and without plans.

sélectionnez le service

select the service

More info on the services





démarrer un
projet

Interpolation based on the "kriging" (kriging)



Description

User manual

See an example

Open / New Project

Do you have a machining problem? (Or, also an other problem?). Do you have already done tests? Based on some tests you can obtain a model of your technic problem. The mathematical model will allow you to adjust your settings to reduce or eliminate your problem.

The -Kriging- does not require you to run specific tests to make a model. It is reputed to be the best system for the creation of such models.

If you have an incomplete test plan, you can retrieve values through interpolation by kriging.

An example can better explain the usefulness of this service.

You have a machining problem and you have already done some tests, even without a specific order. For many cases you can not understand how factors influencing the outcome.

In that case you open a project-kriging, and you enter the testing and the results you have achieved.

The site will carry out a model for you and you can deduce the results for values ??that you have not physically experienced.

Another example.

You have started a project based on the level of experience. This method requires the testing location. You could not make any test or you have not done exactly in the requested locations.

In that case you open a project-kriging-you enter the testing already done. You ask the interpolator to calculate the values ??that you miss.

With the values calculated by kriging you complete your initial project plans based on experience that provides an assessment and visualization effective influence of each factor on the outcome.

start un projet





CHABRON / 05 01

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Project Management of type: "Nuage de points"

Current Projects

| Name: | Creation | Last Access |
|-------------------------------|------------|-------------|
| <input type="radio"/> kinterp | 26/04/2011 | 20/09/2012 |

Open Delete



Create a new project:

Name: demo_krigl Create

définir le nom du projet

set the project name





CHABRON / 2023

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"demo_kriging"

Interpolation by kriging: Step 1 / 5 - Factor to optimize:

You have the possibility to import data from another existing project

Enter in words the entity that you want to optimize. (For example, if your goal is to reduce the roughness of the machined parts, simply type "rough" :

Output

Also, enter the unit of measurement of this entity, for example "um" in the case of roughness. If the entity is unitless, simply type "- "

Unity

définir la variable
et son unité de
mesure

define the result
and its measure
unit





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"demo_kriging"

Interpolation by kriging; Step 1 / 5 - Factor to optimize:

You have the possibility to import data from another existing project **Import**

Enter in words the entity that you want to optimize. (For example, if your goal is to reduce the roughness of the machined parts, simply type "rough" :

Output

Also, enter the unit of measurement of this entity, for example " um " in the case of roughness. If the entity is unitless, simply type "- "



Unity

Next

vous pouvez
charger les
donnés depuis
autre projet

you can also load
data from another
project





CHABRON / 01.23

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"demo_kriging"

Interpolation by kriging; Step 2 / 5 - . Choose the factors that influence the result:

Choose the factors you think influence **result A**:

Factors Other ☒ factor B Add

You have selected 1 Factors

factor A Delete

Back Next

définir les facteurs

defin the factors.





introduire les
valeurs des essais

"demo_kriging"

Interpolation by kriging - Step 3/5 - Introduction of the list of tests performed:

Add a test

Test No. - - - Factor: factor A factor B factor C

| | | | | |
|---|-----|----|----|--------|
| 1 | 120 | 40 | 2 | Delete |
| 2 | 105 | 50 | 66 | Delete |
| 3 | 90 | 66 | 6 | Delete |

Use just numerical values.

If the variable (or factor) requires a definition alphabetically (example: cooling YES / NO) use numerical values(eg watering 1/0)

Back

Next

enter the test
values





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Interpolation by kriging - Step 4/5 - Introduction of measures corresponding to the test

Add a column of measures

Delete a column measures

| Test No. | - - - | Factor: | factor A | factor B | factor C | Mesure 1 | Mesure 2 |
|----------|-------|---------|----------|----------|----------|----------|----------|
| 1 | | | 120 | 40 | 2 | 500 | 510 |
| 2 | | | 105 | 50 | 66 | 620 | 640 |
| 3 | | | 90 | 66 | 6 | 814 | 790 |

Use just numerical values.

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Next

introduire les
résultats des
essais

enter the results
of the tests





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Interpolation by kriging - Step 5/5 - Results:

Based on the model, made by Kriging, you can predict what the result will be by adjusting factors according to your wishes

| factor A | factor B | factor C |
|---|---|---|
|  |  |  |
| 101.7 | 58.46 | 10.32 |
| <input type="button" value="Calculate"/> | | |

Prévision de result A avec ces paramètres: **697.9937** 6822171 number

+ - 16.372367006616

The real values are between the limits with probability of 95% ($2 \cdot \sigma$) in hypotèse a continuous interpolation. If there is no repetition of tests the estimate is only related to the uncertainty of the interpolation.

le modèle calcul
une valeur ...

the model
calculates a value
...





"demo_kriging"

Interpolation by kriging - Step 5/5 - Results:

Based on the model, made by Kriging, you can predict what the result will be by adjusting factors according to your wishes

| factor A | factor B | factor C |
|----------------------------|----------|----------|
| | | |
| 101.7 | 58.46 | 10.32 |
| <button>Calculate</button> | | |

Prévision de result A avec ces paramètres: **697.99376822171 number**

+ - 16.372367006616

The real values are between the limits with probability of 95% ($2 \cdot \sigma$) in hypotèse a continuous interpolation. If there is no repetition of tests the estimate is only related to the uncertainty of the interpolation.

... et son probable écart

... and its probable gap



Bon travail

Good work



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