魔法の鏡（ログイン画面）

mirror-magical.net/mirror.php

https://mirror-magical.net

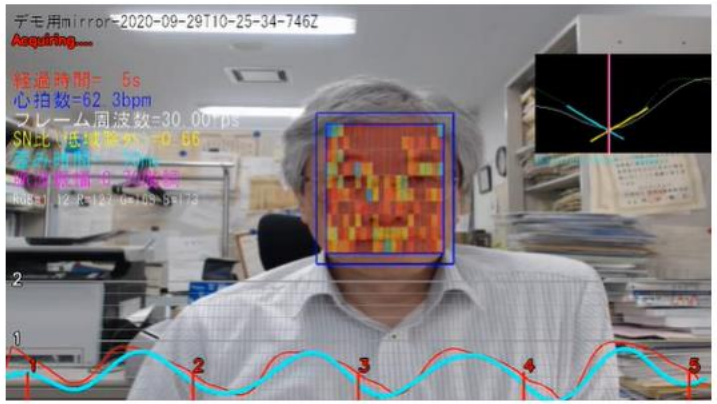
アプリ　メディア要素の記録-...　MediaStream Recor...

Click to move to English version

魔法の鏡

映像脈波を解析します

東北大学 サイバーサイエンスセンター
先端情報技術研究



English

カメラ撮影はブラウザとしてChromeを使った**パソコンだけ**で動作します．多くの**スマホ**では高圧縮のため**動作しません**．

クリック → ☐入力した情報の匿名化後の再利用に同意します．

識別番号　2001

パスワード　•••••••

映像脈波を計測する

過去のデータを見る

The following multivariate analyses will automatically perform:

- **Multiple regression Analysis**
- **Principal component analysis**
- **Factor analysis**

if the data size is sufficiently large at least 20 data.

Mirror Magical (Login Page)

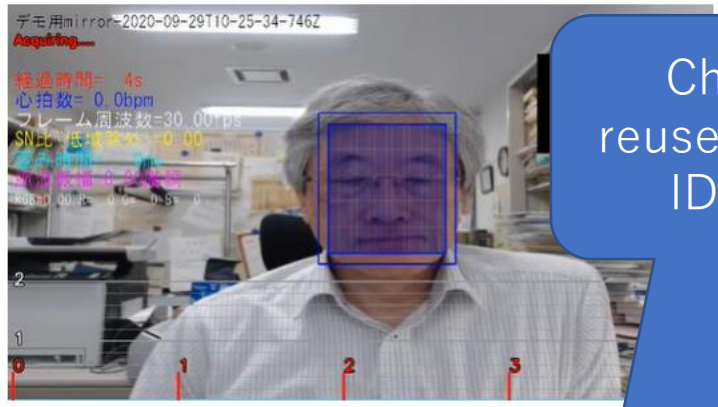
mirror-magical.net/English/mirror.php

Media Recorder API... msn - Google 検索 MediaRecorder exa... MediaStream Recor... W3C MediaStream...

rror Magical

Extract Your Pulses from Video Images

iv. of Advanced Information Technology, erscience Center, Tohoku University



Japanese

mera does NOT function in Smartphones but in **personal computers with Google Chrome**.

Check → I agree to reuse entered information after anonymization

ID 2001

Password •••••••

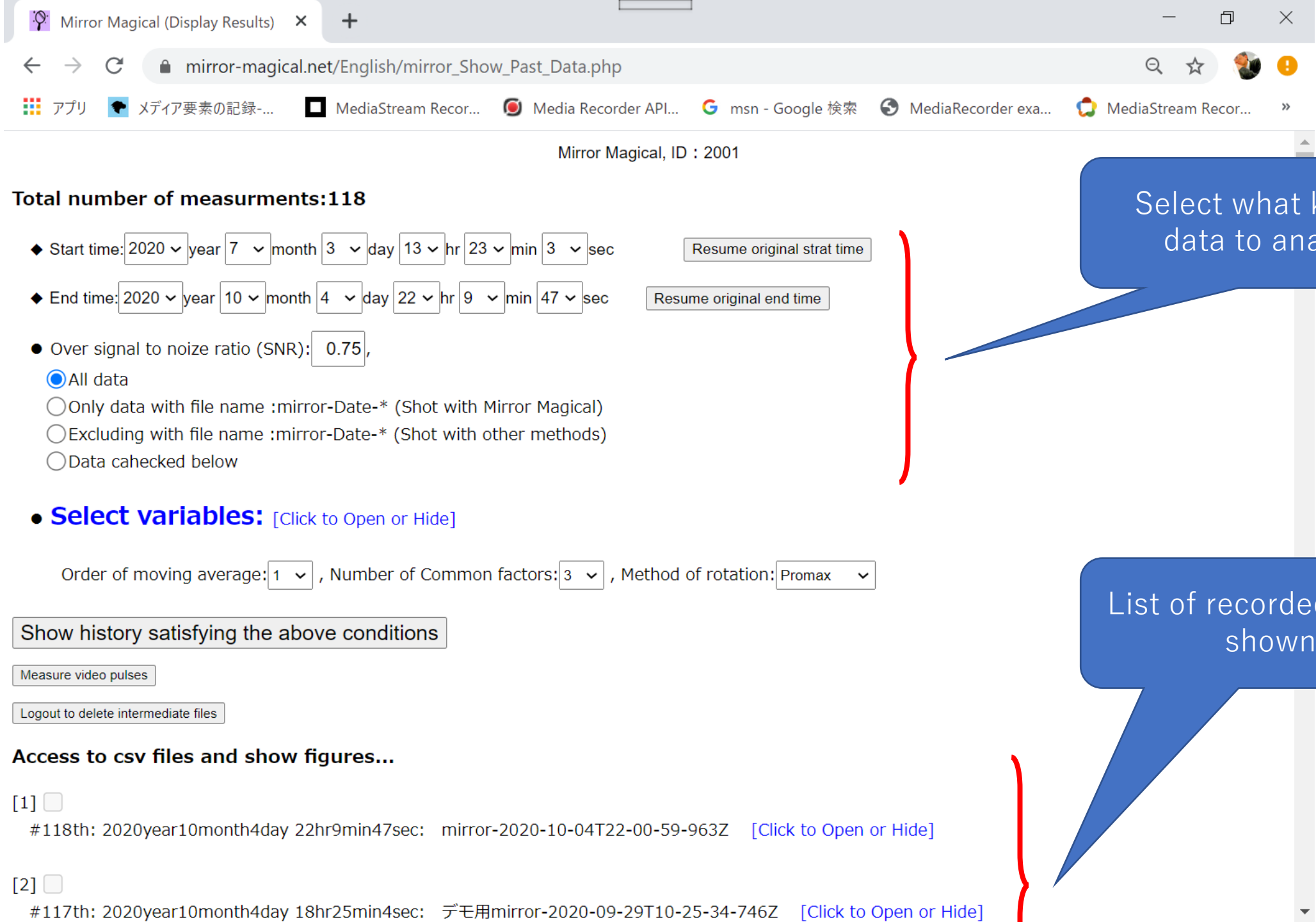
Acquire video pulses

Refer to past results

Check [I agree to reuse...] and enter your ID and password.

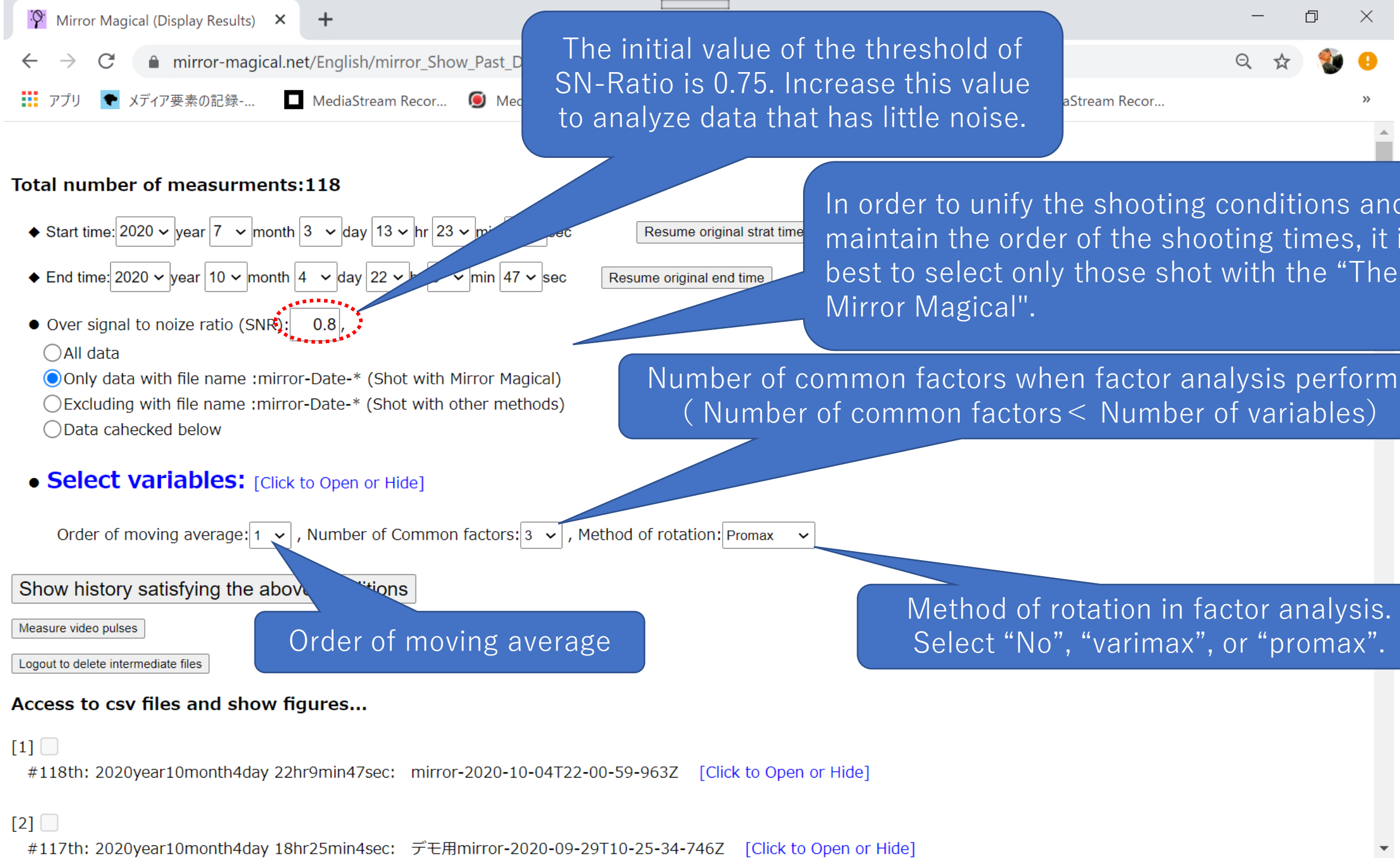
Click [Refer to past results]

Your camera can work only in Google Chrome as a browser.



Select what kind of data to analyze

List of recorded data is shown



The initial value of the threshold of SN-Ratio is 0.75. Increase this value to analyze data that has little noise.

In order to unify the shooting conditions and maintain the order of the shooting times, it is best to select only those shot with the “The Mirror Magical".

Number of common factors when factor analysis performs (Number of common factors < Number of variables)

Order of moving average

Method of rotation in factor analysis. Select “No”, “varimax”, or “promax”.

Mirror Magical (Display Results)

mirror-magical.net/English/mirror_Show_Past_Data.php

アプリ　メディア要素の記録-...　MediaStream Recor...　Media Recorder API...　msn - Google 検索　MediaRecorder exa...　MediaStream Recor...

Mirror Magical, ID : 2001

Total number of measurments:118

◆ Start time: 2020 year 7 month 3 day 13 hr 23 min 3 sec　Resume original strat time

◆ End time: 2020 year 10 month 4 day 22 hr 9 min 47 sec　Resume original end time

● Over signal to noize ratio (SNR): 0.8 ,

- ○ All data
- ◉ Only data with file name :mirror-Date-* (Shot with Mirror Magical)
- ○ Excluding with file name :mirror-Date-* (Shot with other methods)
- ○ Data cahecked below

● **Select variables:** [Click to Open or Hide]

Click to select variables to analyze

Order of moving average: 1 , Number of Common factors: 3 , Method of rotation: Promax

Show history satisfying the above conditions

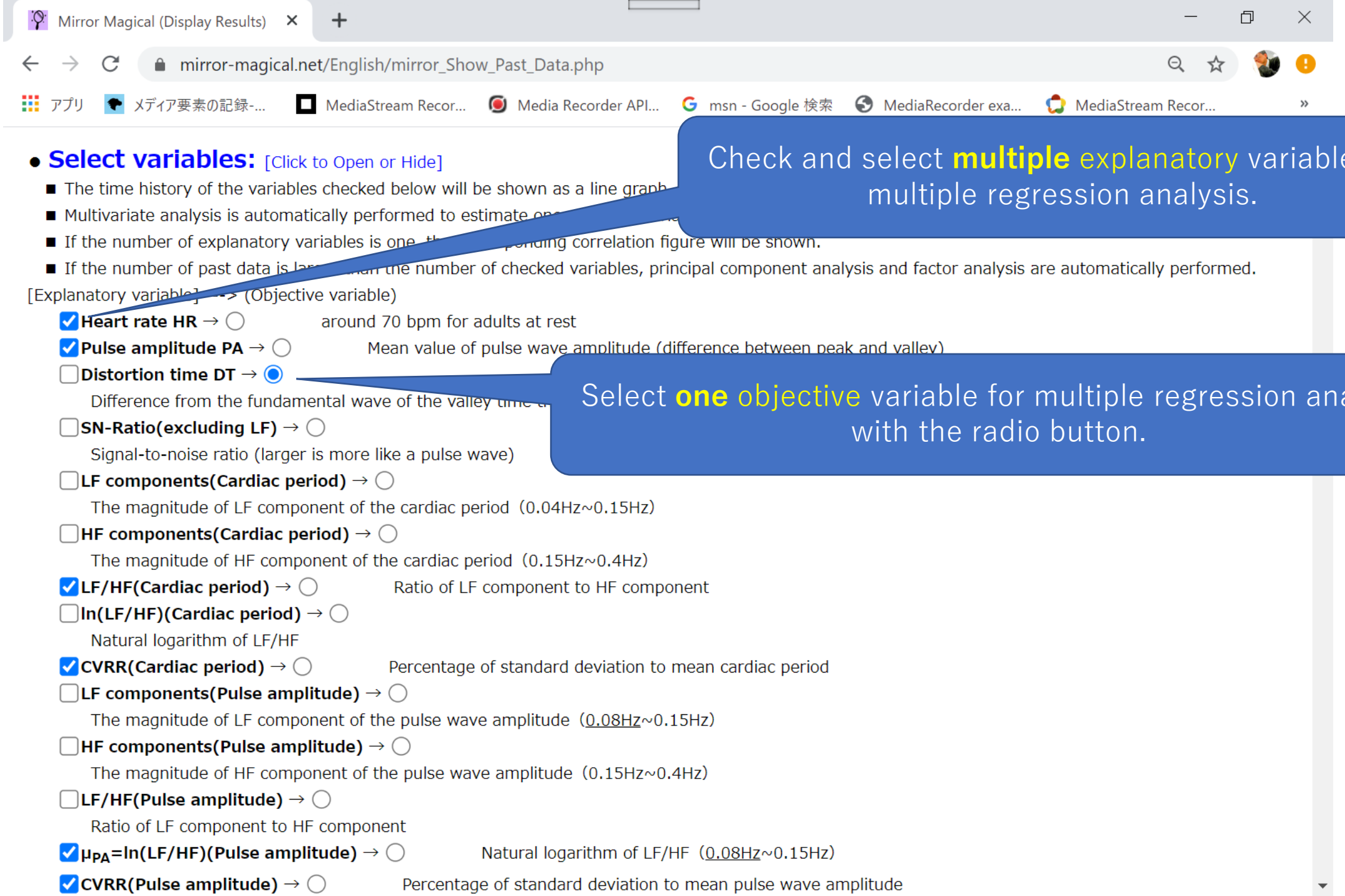
Measure video pulses

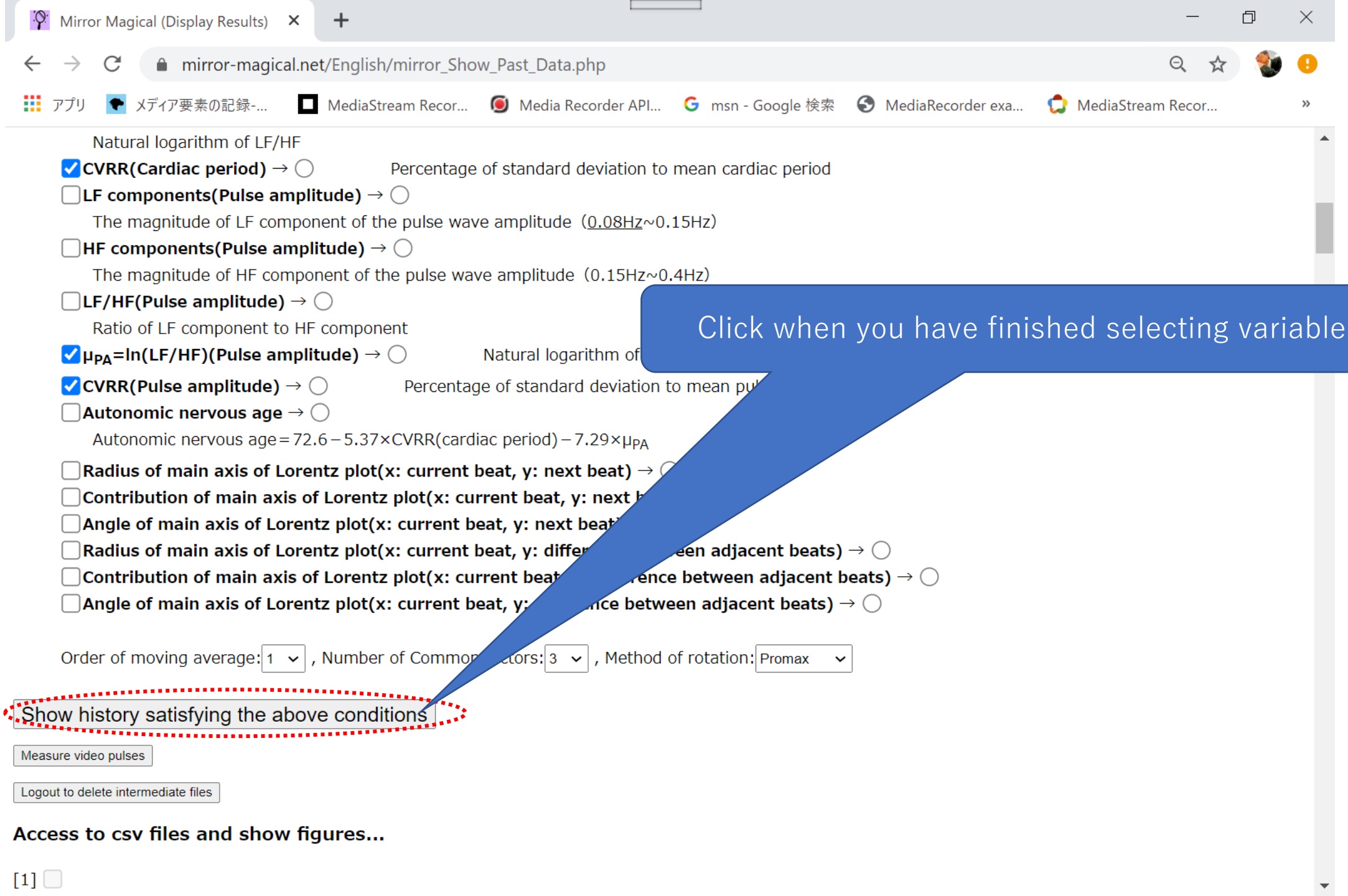
Logout to delete intermediate files

Access to csv files and show figures...

[1] ☐
#118th: 2020year10month4day 22hr9min47sec:　mirror-2020-10-04T22-00-59-963Z　[Click to Open or Hide]

[2] ☐
#117th: 2020year10month4day 18hr25min4sec:　デモ用mirror-2020-09-29T10-25-34-746Z　[Click to Open or Hide]


Mirror Magical (Display Results)
mirror-magical.net/English/mirror_Show_Past_Data.php
アプリ
メディア要素の記録-...
MediaStream Recor...
Media Recorder API...
msn - Google 検索
MediaRecorder exa...
MediaStream Recor...
Select variables: [Click to Open or Hide]
The time history of the variables checked below will be shown as a line graph
Multivariate analysis is automatically performed to estimate one
If the number of explanatory variables is one, th
ponding correlation figure will be shown.
If the number of past data is lar
than the number of checked variables, principal component analysis and factor analysis are automatically performed.
[Explanatory variable] --> (Objective variable)
Heart rate HR → around 70 bpm for adults at rest
Pulse amplitude PA → Mean value of pulse wave amplitude (difference between peak and valley)
Distortion time DT →
Difference from the fundamental wave of the valley time
SN-Ratio(excluding LF) →
Signal-to-noise ratio (larger is more like a pulse wave)
LF components(Cardiac period) →
The magnitude of LF component of the cardiac period（0.04Hz~0.15Hz）
HF components(Cardiac period) →
The magnitude of HF component of the cardiac period（0.15Hz~0.4Hz）
LF/HF(Cardiac period) → Ratio of LF component to HF component
ln(LF/HF)(Cardiac period) →
Natural logarithm of LF/HF
CVRR(Cardiac period) → Percentage of standard deviation to mean cardiac period
LF components(Pulse amplitude) →
The magnitude of LF component of the pulse wave amplitude（0.08Hz~0.15Hz）
HF components(Pulse amplitude) →
The magnitude of HF component of the pulse wave amplitude（0.15Hz~0.4Hz）
LF/HF(Pulse amplitude) →
Ratio of LF component to HF component
μPA=ln(LF/HF)(Pulse amplitude) → Natural logarithm of LF/HF（0.08Hz~0.15Hz）
CVRR(Pulse amplitude) → Percentage of standard deviation to mean pulse wave amplitude
Check and select multiple explanatory variables for multiple regression analysis.
Select one objective variable for multiple regression analysis with the radio button.


Mirror Magical (Display Results)
mirror-magical.net/English/mirror_Show_Past_Data.php
アプリ
メディア要素の記録-...
MediaStream Recor...
Media Recorder API...
msn - Google 検索
MediaRecorder exa...
MediaStream Recor...
Natural logarithm of LF/HF
CVRR(Cardiac period) → Percentage of standard deviation to mean cardiac period
LF components(Pulse amplitude) →
The magnitude of LF component of the pulse wave amplitude（0.08Hz~0.15Hz）
HF components(Pulse amplitude) →
The magnitude of HF component of the pulse wave amplitude（0.15Hz~0.4Hz）
LF/HF(Pulse amplitude) →
Ratio of LF component to HF component
μPA=ln(LF/HF)(Pulse amplitude) → Natural logarithm of
CVRR(Pulse amplitude) → Percentage of standard deviation to mean pu
Autonomic nervous age →
Autonomic nervous age＝72.6－5.37×CVRR(cardiac period)－7.29×μPA
Radius of main axis of Lorentz plot(x: current beat, y: next beat) →
Contribution of main axis of Lorentz plot(x: current beat, y: next
Angle of main axis of Lorentz plot(x: current beat, y: next beat
Radius of main axis of Lorentz plot(x: current beat, y: differ
een adjacent beats) →
Contribution of main axis of Lorentz plot(x: current beat
rence between adjacent beats) →
Angle of main axis of Lorentz plot(x: current beat, y:
nce between adjacent beats) →
Order of moving average: 1 , Number of Commo tors: 3 , Method of rotation: Promax
Show history satisfying the above conditions
Measure video pulses
Logout to delete intermediate files
Access to csv files and show figures...
[1]
Click when you have finished selecting variables

Mirror Magical (Display Results)

mirror-magical.net/English/mirror_Show_Past_Data.php#History

アプリ　メディア要素の記録-...　MediaStream Recor...　Media Recorder API...　msn - Google 検索　MediaRecorder exa...　MediaStream Recor...

Total number of measurments:118

Show history again after reseting the conditions

Measure video pulses

Logout to delete intermediate files

Selected variables and results

- Order of moving average:1
- SN-Ratio is over 0.8
- Start time: 2020year, 7month, 3day, 13hour, 23min, 3sec，End time: 2020year, 10month ,4day, 22hour, 9min, 47sec
- File name is mirror-Date-* (Shot with the Mirror Magical)

are displayed.

Variables for regression analysis----------

Objective variable=**Distortion time DT**

Explanatory variable(1)=**Heart rate HR**

Explanatory variable(2)=**Pulse amplitude PA**

Explanatory variable(3)=**LF/HF(Cardiac period)**

Explanatory variable(4)=**CVRR(Cardiac period)**

Explanatory variable(5)=**μ_{PA}=ln(LF/HF)(Pulse amplitude)**

Explanatory variable(6)=**CVRR(Pulse amplitude)**

Analyzed data: 75, Excluded data: 43, Total data: 118

↓↓↓↓↓↓↓↓↓↓↓↓↓↓ Objective Variable ↓↓↓↓↓↓↓↓↓↓↓↓↓↓

Distortion time DT [ms]　Moving Averaged　Estimates of Raw Data　Estimates of Moving Averaged Data

The categories of selected data are shown.

The objective and explanatory variables for multiple regression analysis are shown.

The number of data that meets the categories is shown.

Mirror Magical (Display Results)

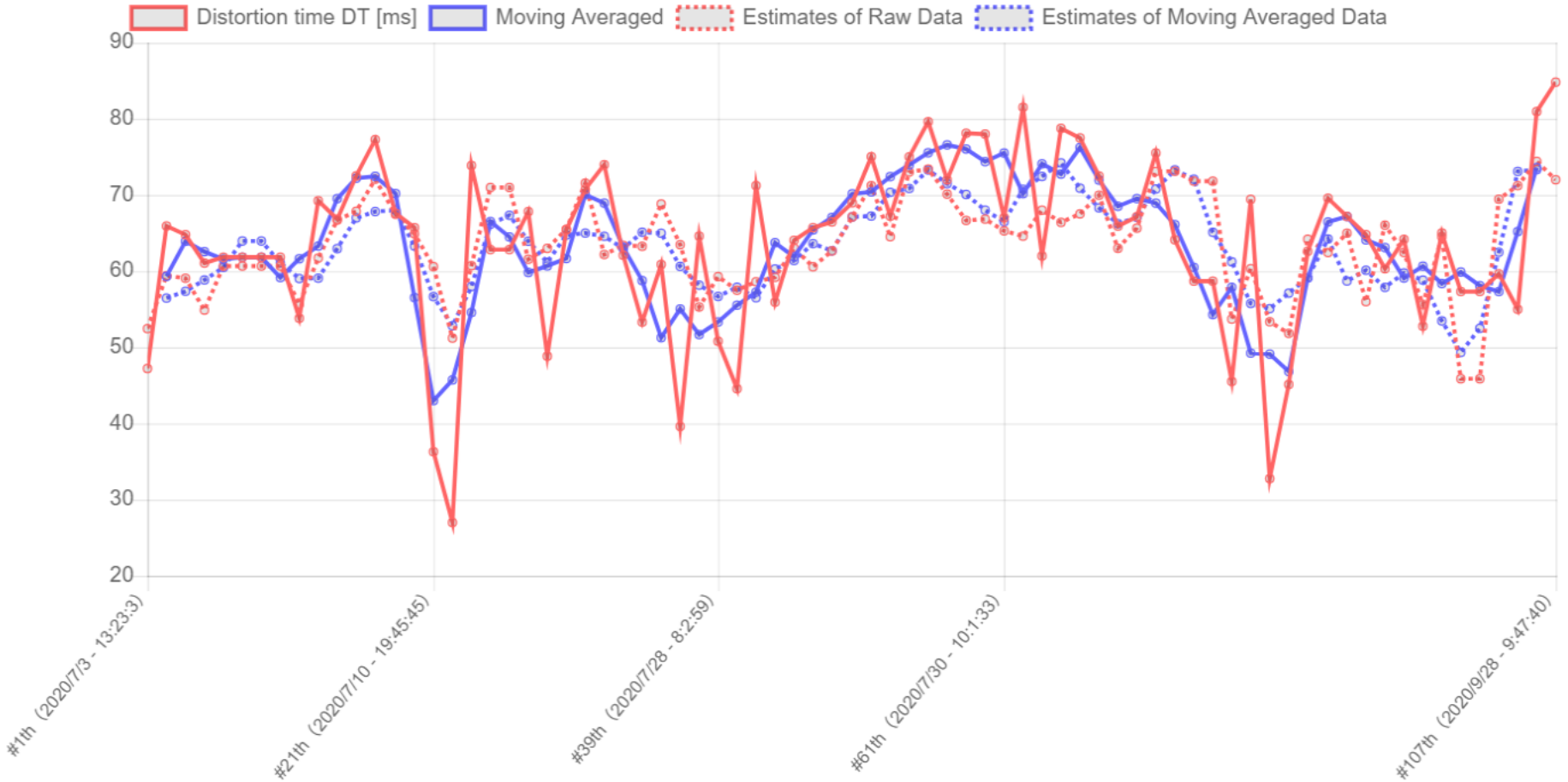
mirror-magical.net/English/mirror_Show_Past_Data.ph

アプリ　メディア要素の記録-...　MediaStream Recor...　Media Rec

Analyzed data: 75, Excluded data: 43, Total data: 118

The objective variable, its estimated value, and the time series of each moving average value are displayed.

↓↓↓↓↓↓↓↓↓↓↓↓↓ Objective Variable ↓↓↓↓↓↓↓↓↓↓↓↓↓



↓↓↓↓↓↓↓↓↓↓↓↓↓ Explanatory variable (1) ↓↓↓↓↓↓↓↓↓↓↓↓↓

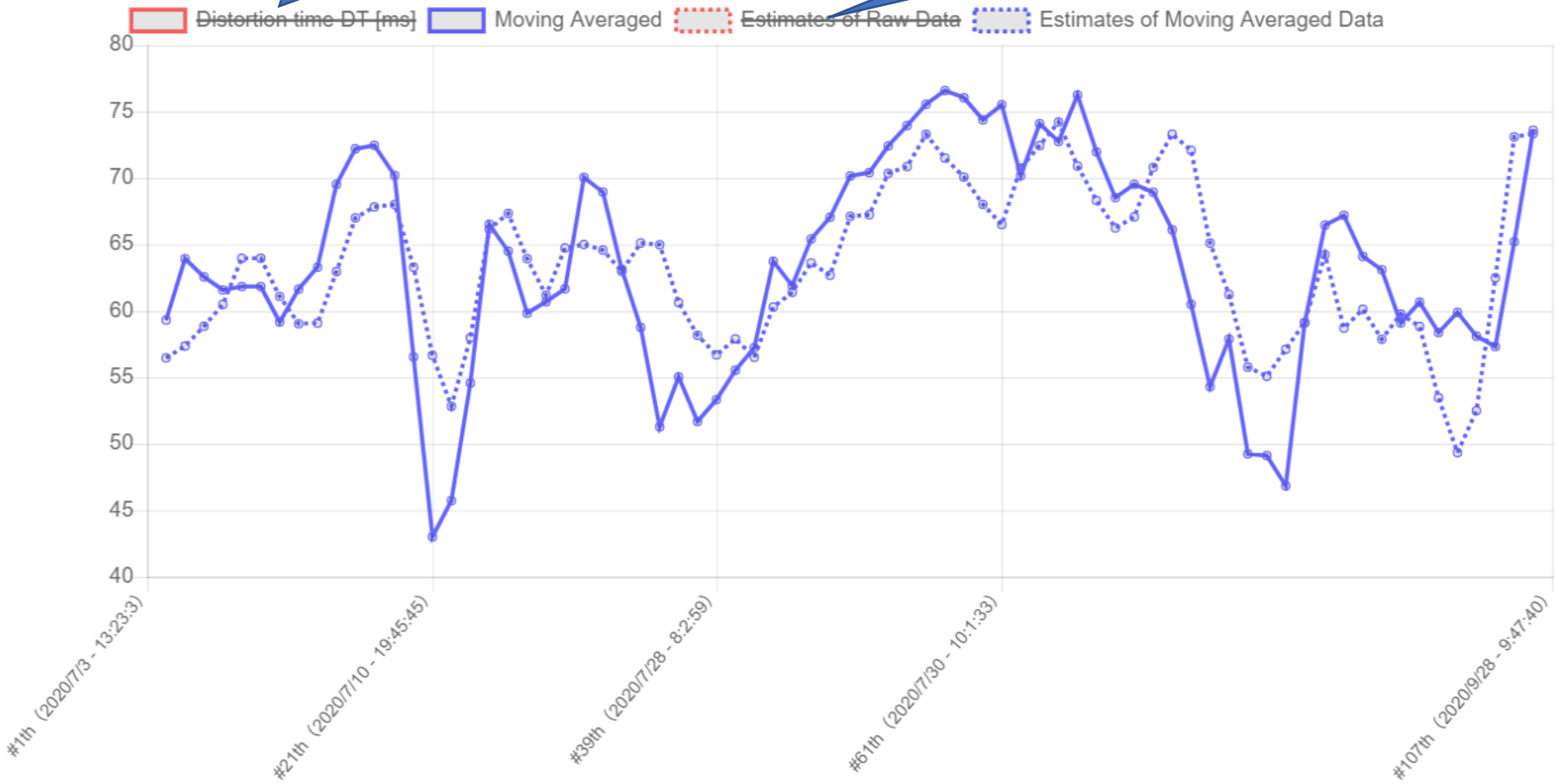
Click the legend part and the corresponding graph disappears

Click the legend part and the corresponding graph disappears

st_Data.php#History

Media Recorder API... msn

↓↓↓↓↓↓↓↓↓↓↓↓↓ Objective Variable ↓↓↓↓↓↓↓↓↓↓↓↓↓



↓↓↓↓↓↓↓↓↓↓↓↓↓ Explanatory variable (1) ↓↓↓↓↓↓↓↓↓↓↓↓↓

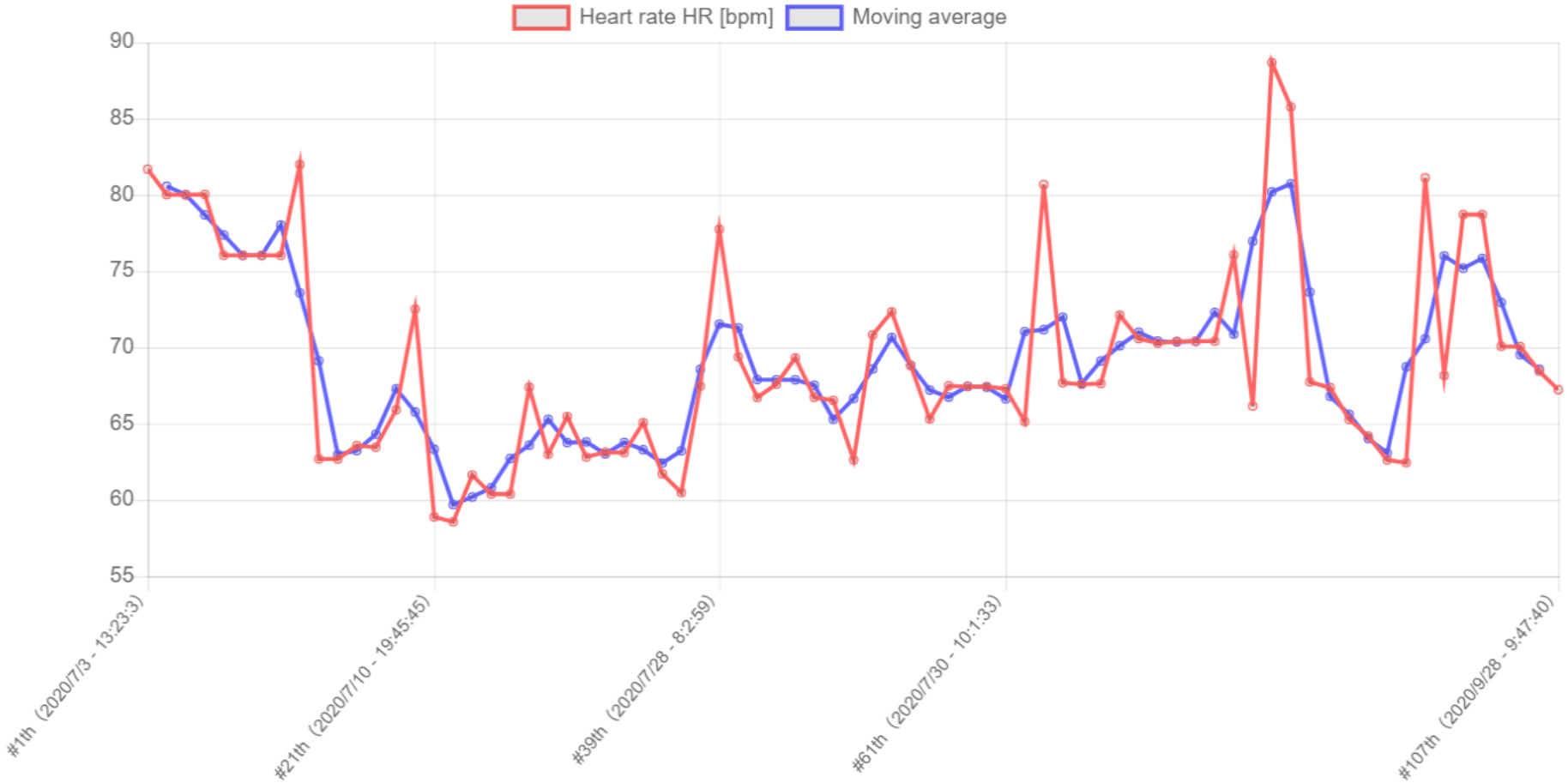
Mirror Magical (Display Results)

mirror-magical.net/English/mirror_Show_Past_Data.php#History

アプリ　メディア要素の記録-...　MediaStream Recor...　Media Recorder API...　msn - Google

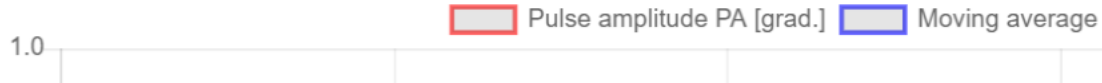
The explanatory variables and the time series of their moving averages are displayed.

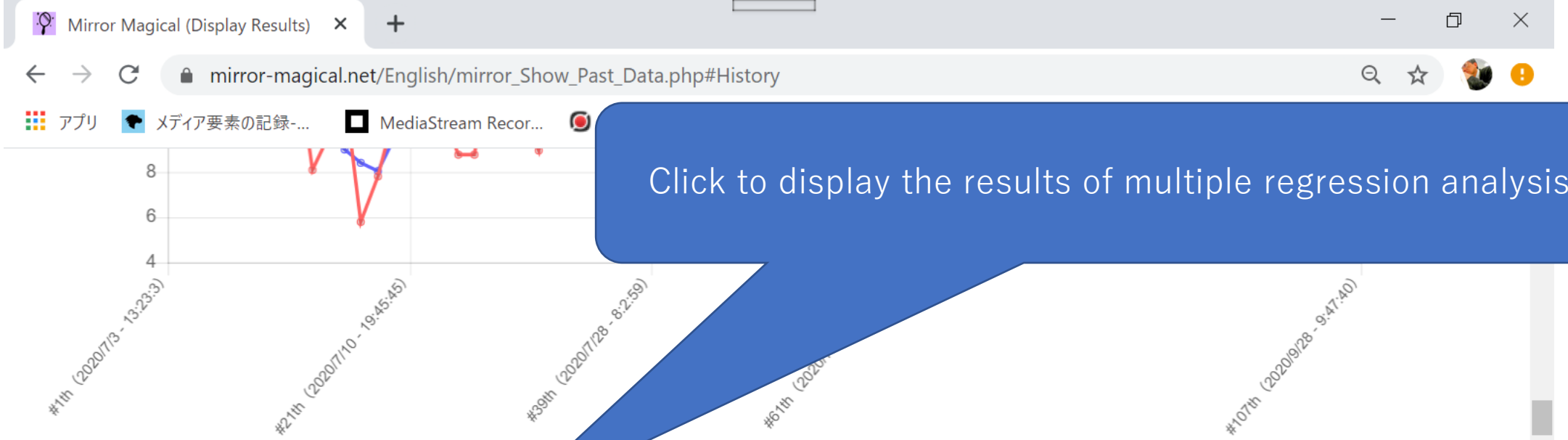
↓↓↓↓↓↓↓↓↓↓↓↓↓↓ Explanatory variable（1） ↓↓↓↓↓↓↓↓↓↓↓↓↓↓



Scroll to see the remaining explanatory variables

↓↓↓↓↓↓↓↓↓↓↓↓↓↓ Explanatory variable（2） ↓↓↓↓↓↓↓↓↓↓↓↓↓↓



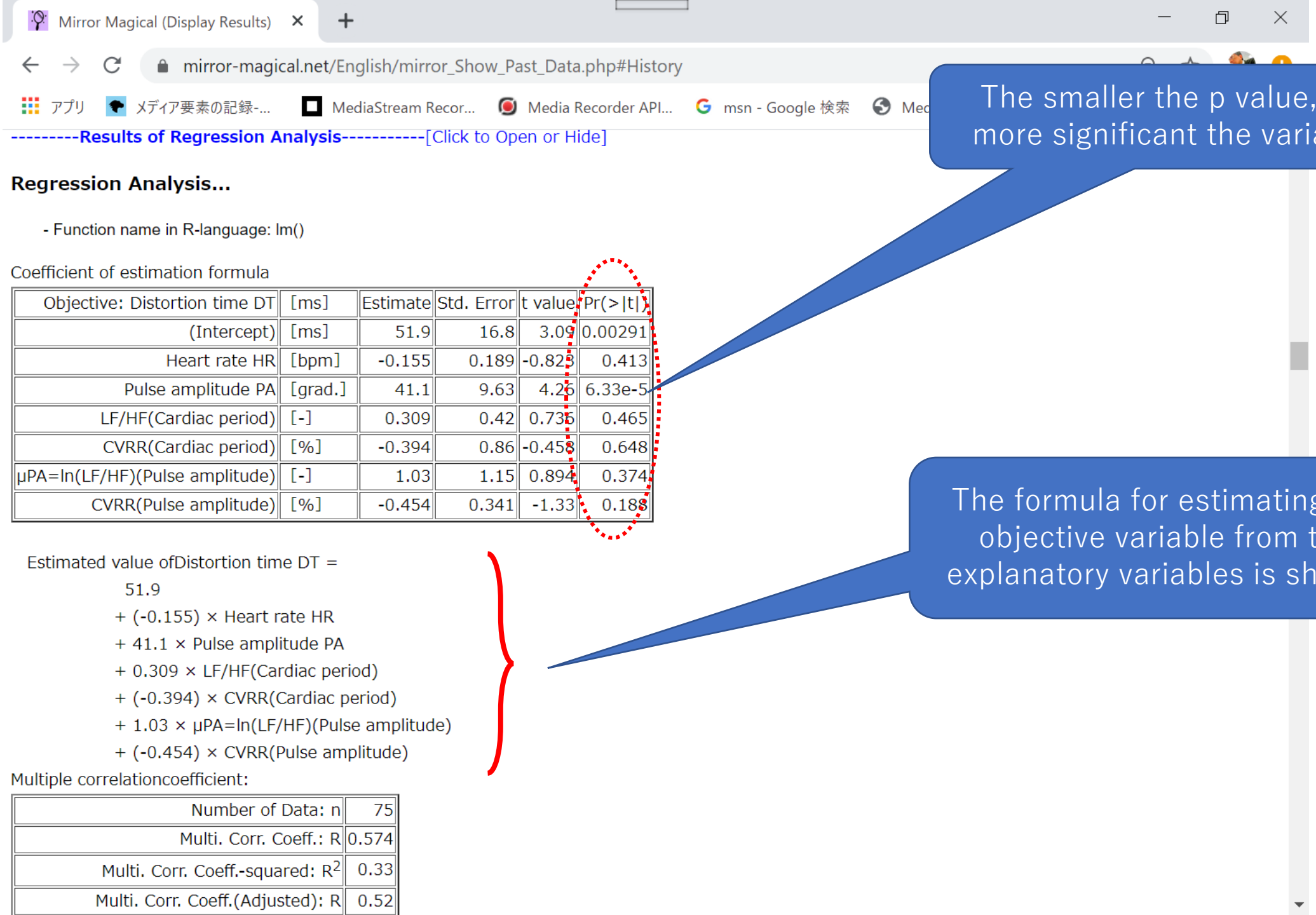


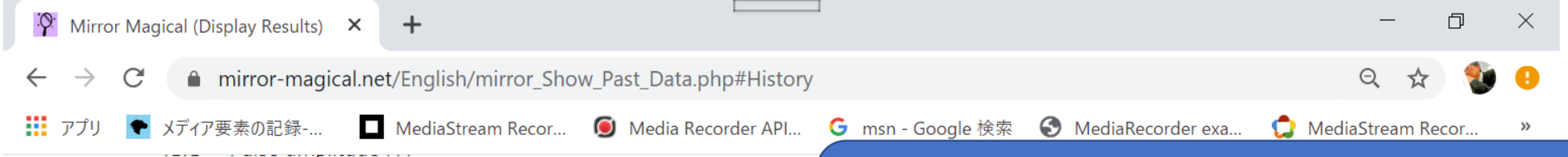
Click to display the results of multiple regression analysis

---------**Results of Regression Analysis**----------[Click to Open or Hide]

---------**Results of Principal Component Analysis**---------[Click to Open or Hide]

---------**Results of Factor Analysis**----------[Click to Open or Hide]


Mirror Magical (Display Results)
mirror-magical.net/English/mirror_Show_Past_Data.php#History
アプリ
メディア要素の記録-...
MediaStream Recor...
Media Recorder API...
msn - Google 検索
---------Results of Regression Analysis----------[Click to Open or Hide]
Regression Analysis...
- Function name in R-language: lm()
Coefficient of estimation formula
Objective: Distortion time DT [ms] Estimate Std. Error t value Pr(>|t|)
(Intercept) [ms] 51.9 16.8 3.09 0.00291
Heart rate HR [bpm] -0.155 0.189 -0.823 0.413
Pulse amplitude PA [grad.] 41.1 9.63 4.26 6.33e-5
LF/HF(Cardiac period) [-] 0.309 0.42 0.735 0.465
CVRR(Cardiac period) [%] -0.394 0.86 -0.458 0.648
μPA=ln(LF/HF)(Pulse amplitude) [-] 1.03 1.15 0.894 0.374
CVRR(Pulse amplitude) [%] -0.454 0.341 -1.33 0.188
Estimated value ofDistortion time DT =
51.9
+ (-0.155) × Heart rate HR
+ 41.1 × Pulse amplitude PA
+ 0.309 × LF/HF(Cardiac period)
+ (-0.394) × CVRR(Cardiac period)
+ 1.03 × μPA=ln(LF/HF)(Pulse amplitude)
+ (-0.454) × CVRR(Pulse amplitude)
Multiple correlationcoefficient:
Number of Data: n 75
Multi. Corr. Coeff.: R 0.574
Multi. Corr. Coeff.-squared: R2 0.33
Multi. Corr. Coeff.(Adjusted): R 0.52
The smaller the p value, the more significant the variable.
The formula for estimating the objective variable from the explanatory variables is shown.



+ 0.309 × LF/HF(Cardiac period)
+ (-0.394) × CVRR(Cardiac period)
+ 1.03 × μPA=ln(LF/HF)(Pulse amplitude)
+ (-0.454) × CVRR(Pulse amplitude)

Multiple correlationcoefficient:

Number of Data: n	75
Multi. Corr. Coeff.: R	0.574
Multi. Corr. Coeff.-squared: R^2	0.33
Multi. Corr. Coeff.(Adjusted): R	0.52
Multi. Corr. Coeff.(Adjusted)-squared: R^2	0.271
AIC	562

The larger the multiple correlation coefficient, the higher the accuracy of estimation.

---------Results of Regression Analysis for Moving Averaged Data---------

(1 data was/were excluded from the begining and the ending data)

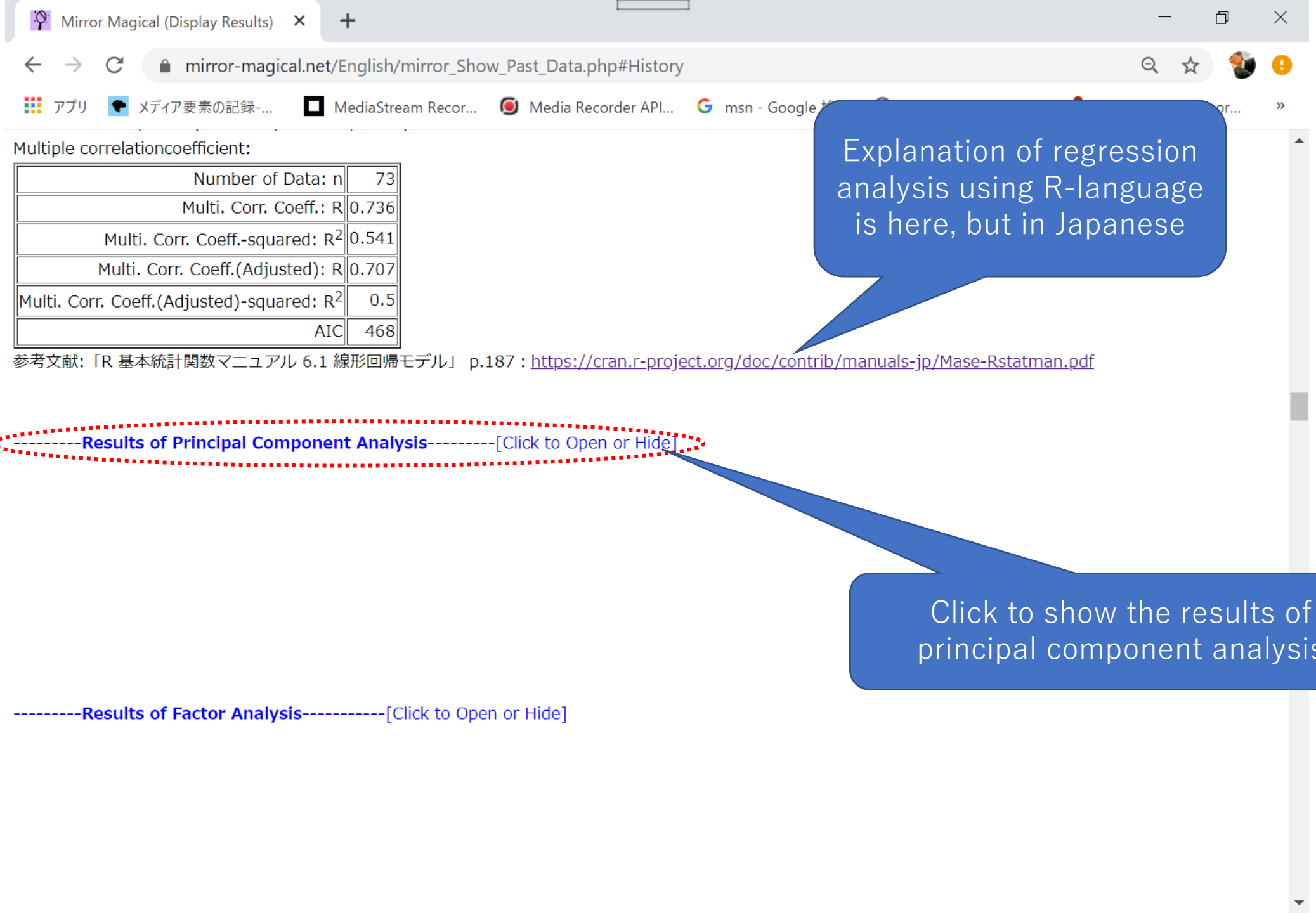
Coefficient of estimation formula

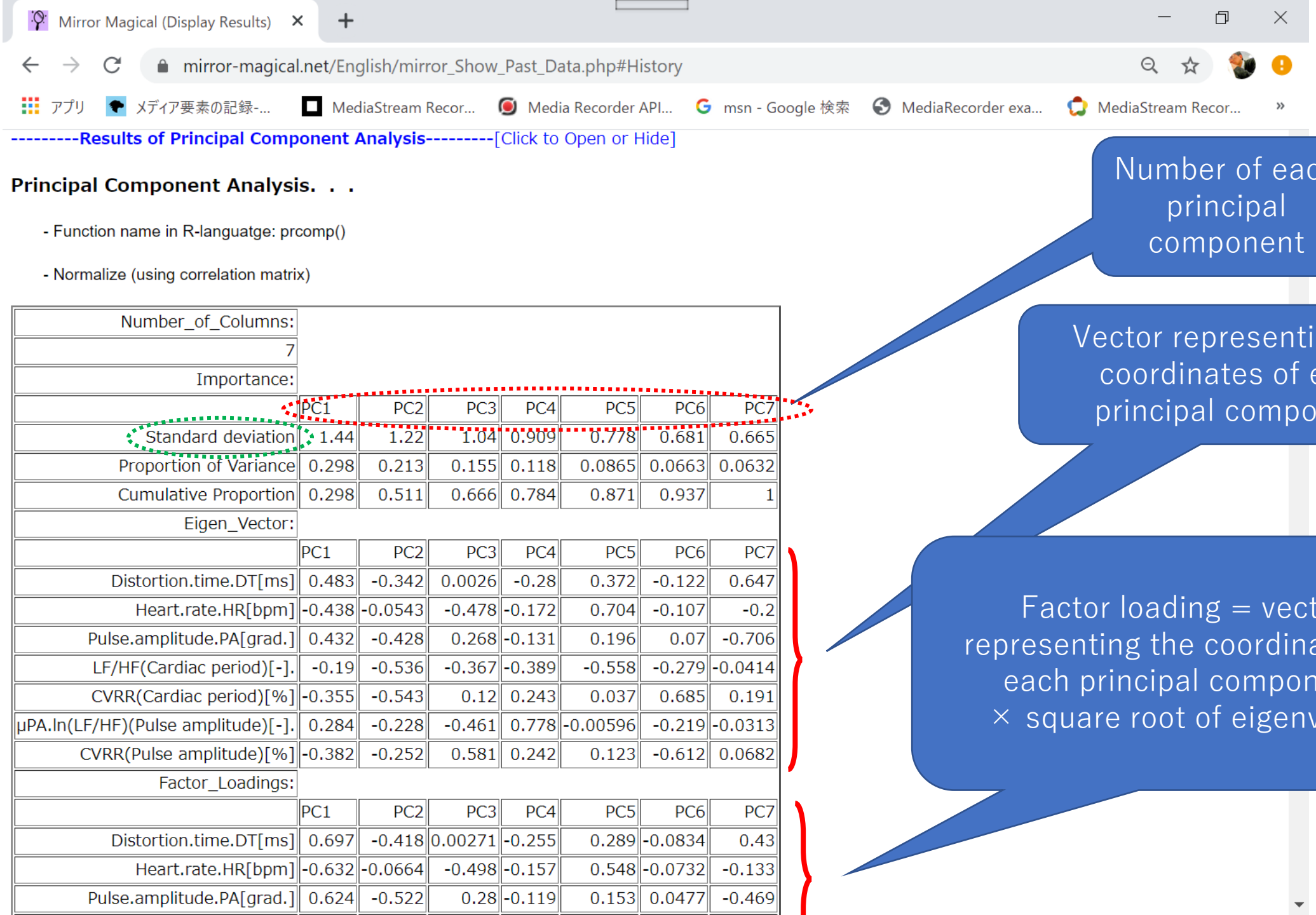
Objective: Distortion time DT	[ms]	Estimate	Std. Error	t value	Pr(>|t|)
(Intercept)	[ms]	27.3	13.4	2.04	0.0451
Heart rate HR	[bpm]	0.0138	0.147	0.0937	0.926
Pulse amplitude PA	[grad.]	54.5	8.2	6.65	6.82e-9
LF/HF(Cardiac period)	[-]	0.998	0.384	2.6	0.0115
CVRR(Cardiac period)	[%]	-0.803	0.747	-1.07	0.286
μPA=ln(LF/HF)(Pulse amplitude)	[-]	1.09	0.977	1.11	0.27
CVRR(Pulse amplitude)	[%]	-0.211	0.297	-0.71	0.48

Similar results are displayed for moving averaged values

Estimated value ofDistortion time DT =

27.3


Mirror Magical (Display Results)
mirror-magical.net/English/mirror_Show_Past_Data.php#History
アプリ
メディア要素の記録-...
MediaStream Recor...
Media Recorder API...
msn - Google
Multiple correlationcoefficient:
Number of Data: n 73
Multi. Corr. Coeff.: R 0.736
Multi. Corr. Coeff.-squared: R2 0.541
Multi. Corr. Coeff.(Adjusted): R 0.707
Multi. Corr. Coeff.(Adjusted)-squared: R2 0.5
AIC 468
参考文献:「R 基本統計関数マニュアル 6.1 線形回帰モデル」 p.187 : https://cran.r-project.org/doc/contrib/manuals-jp/Mase-Rstatman.pdf
Explanation of regression analysis using R-language is here, but in Japanese
---------Results of Principal Component Analysis---------[Click to Open or Hide]
Click to show the results of principal component analysis
---------Results of Factor Analysis----------[Click to Open or Hide]


Mirror Magical (Display Results)
mirror-magical.net/English/mirror_Show_Past_Data.php#History
アプリ
メディア要素の記録-...
MediaStream Recor...
Media Recorder API...
msn - Google 検索
MediaRecorder exa...
MediaStream Recor...
---------Results of Principal Component Analysis---------[Click to Open or Hide]
Principal Component Analysis. . .
- Function name in R-languatge: prcomp()
- Normalize (using correlation matrix)
Number_of_Columns:
7
Importance:
PC1 PC2 PC3 PC4 PC5 PC6 PC7
Standard deviation 1.44 1.22 1.04 0.909 0.778 0.681 0.665
Proportion of Variance 0.298 0.213 0.155 0.118 0.0865 0.0663 0.0632
Cumulative Proportion 0.298 0.511 0.666 0.784 0.871 0.937 1
Eigen_Vector:
PC1 PC2 PC3 PC4 PC5 PC6 PC7
Distortion.time.DT[ms] 0.483 -0.342 0.0026 -0.28 0.372 -0.122 0.647
Heart.rate.HR[bpm] -0.438 -0.0543 -0.478 -0.172 0.704 -0.107 -0.2
Pulse.amplitude.PA[grad.] 0.432 -0.428 0.268 -0.131 0.196 0.07 -0.706
LF/HF(Cardiac period)[-]. -0.19 -0.536 -0.367 -0.389 -0.558 -0.279 -0.0414
CVRR(Cardiac period)[%] -0.355 -0.543 0.12 0.243 0.037 0.685 0.191
μPA.ln(LF/HF)(Pulse amplitude)[-]. 0.284 -0.228 -0.461 0.778 -0.00596 -0.219 -0.0313
CVRR(Pulse amplitude)[%] -0.382 -0.252 0.581 0.242 0.123 -0.612 0.0682
Factor_Loadings:
PC1 PC2 PC3 PC4 PC5 PC6 PC7
Distortion.time.DT[ms] 0.697 -0.418 0.00271 -0.255 0.289 -0.0834 0.43
Heart.rate.HR[bpm] -0.632 -0.0664 -0.498 -0.157 0.548 -0.0732 -0.133
Pulse.amplitude.PA[grad.] 0.624 -0.522 0.28 -0.119 0.153 0.0477 -0.469
Number of each principal component
Vector representing the coordinates of each principal component
Factor loading = vector representing the coordinates of each principal component × square root of eigenvalue

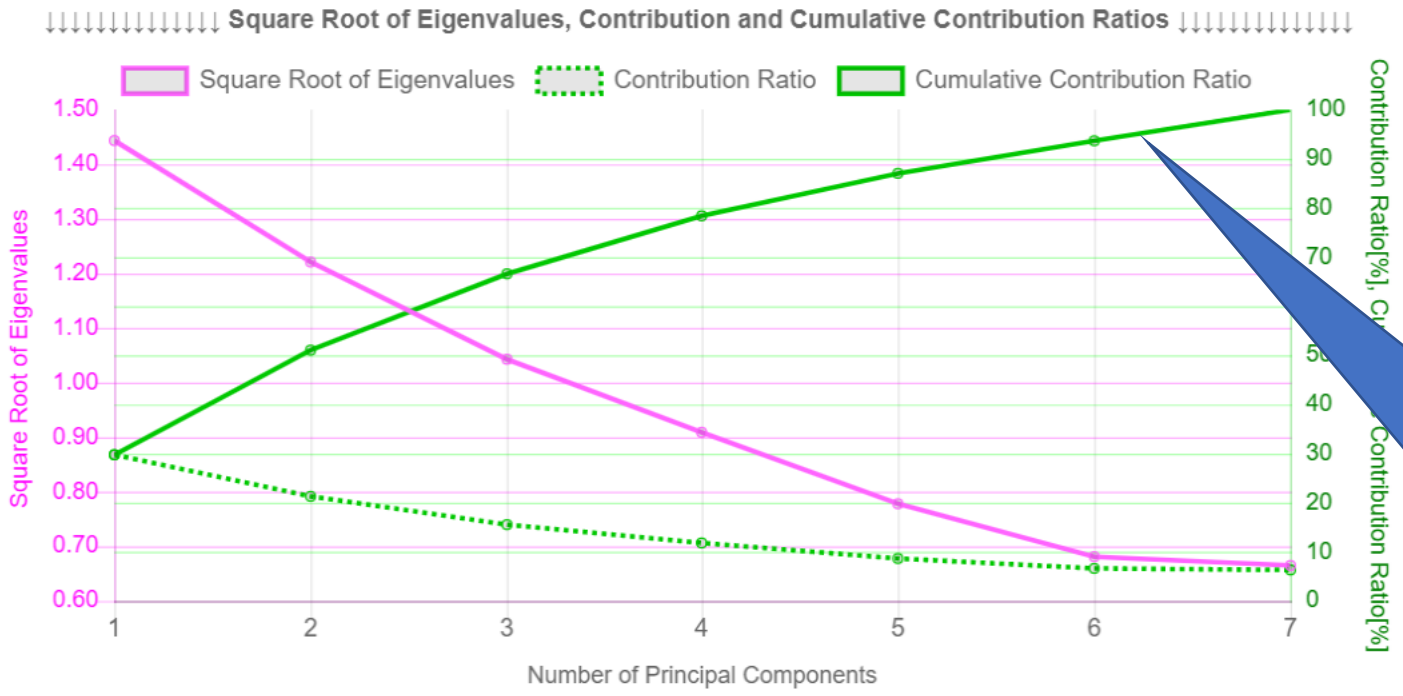
Mirror Magical (Display Results)

mirror-magical.net/English/mirror_Show_Past_Data.php#History

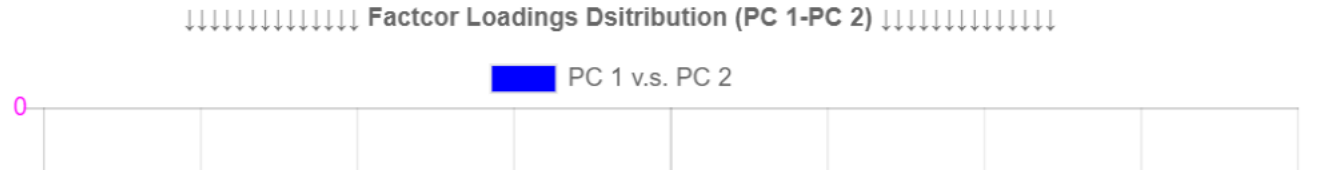
アプリ　メディア要素の記録-...　MediaStream Recor...　Media Recorder API...　msn - Google 検索　MediaRecorder exa...　MediaStream Recor...

Pulse.amplitude.PA[grad.]	0.624	-0.522	0.28	-0.119	0.153	0.0477	-0.469
LF/HF(Cardiac period)[-].	-0.274	-0.654	-0.382	-0.354	-0.434	-0.19	-0.0275
CVRR(Cardiac period)[%]	-0.512	-0.663	0.125	0.221	0.0288	0.466	0.127
μPA.ln(LF/HF)(Pulse amplitude)[-].	0.41	-0.278	-0.481	0.707	-0.00464	-0.149	-0.0208
CVRR(Pulse amplitude)[%]	-0.552	-0.308	0.606	0.22	0.0954	-0.417	0.0454

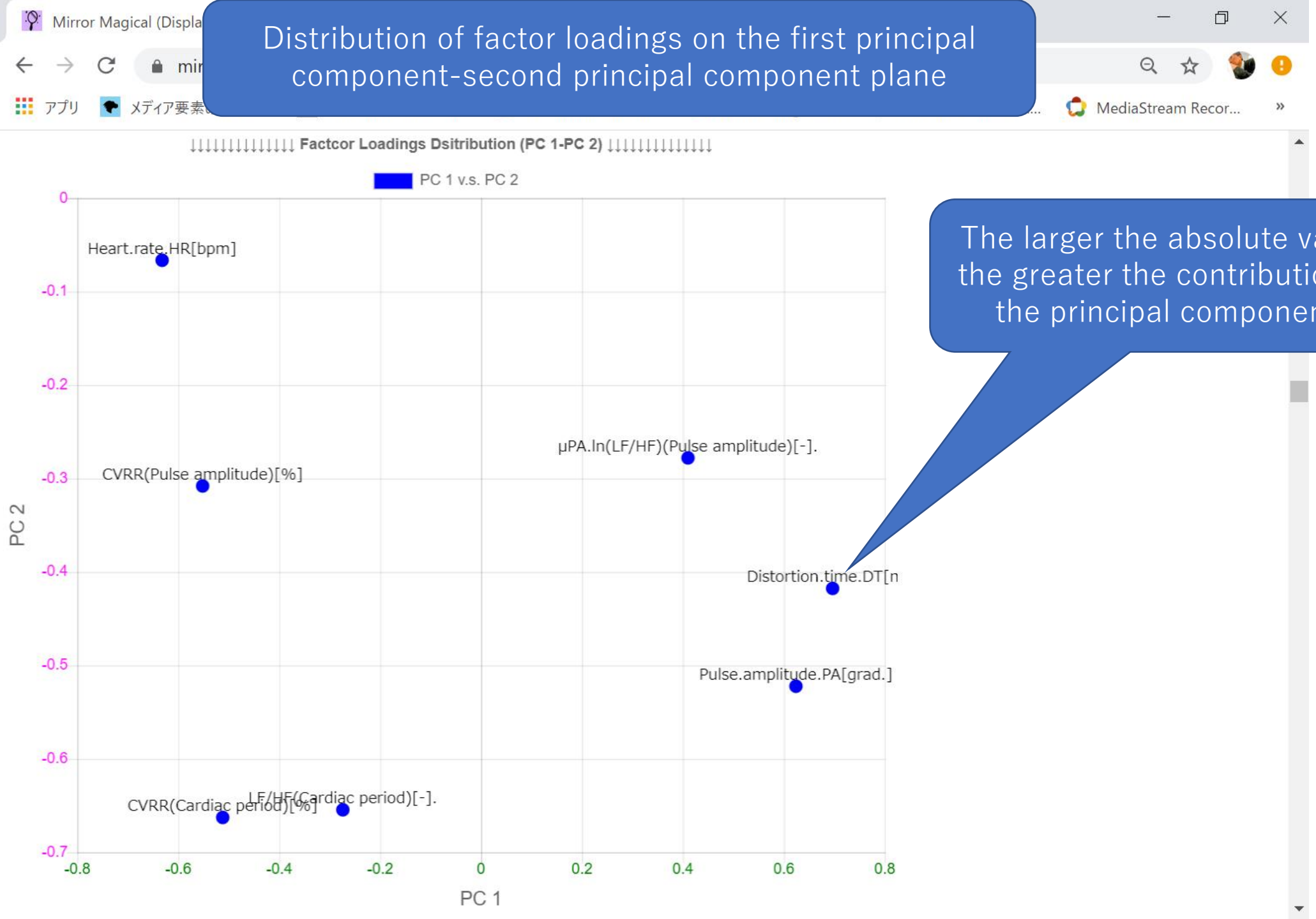
参考文献:「R 基本統計関数マニュアル 5.2 主成分分析」 p.161：https://cran.r-project.org/doc/contrib/manuals-jp/Mase-Rstatman.pdf



Cumulative contribution rate [%]: The percentage that can be explained up to the principal component



Distribution of factor loadings on the first principal component-second principal component plane

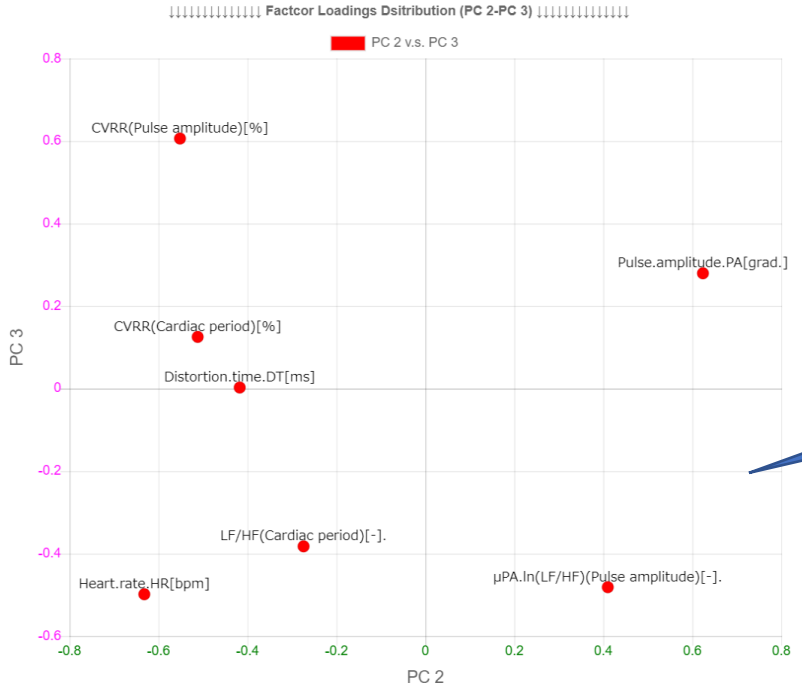


The larger the absolute value, the greater the contribution to the principal component.

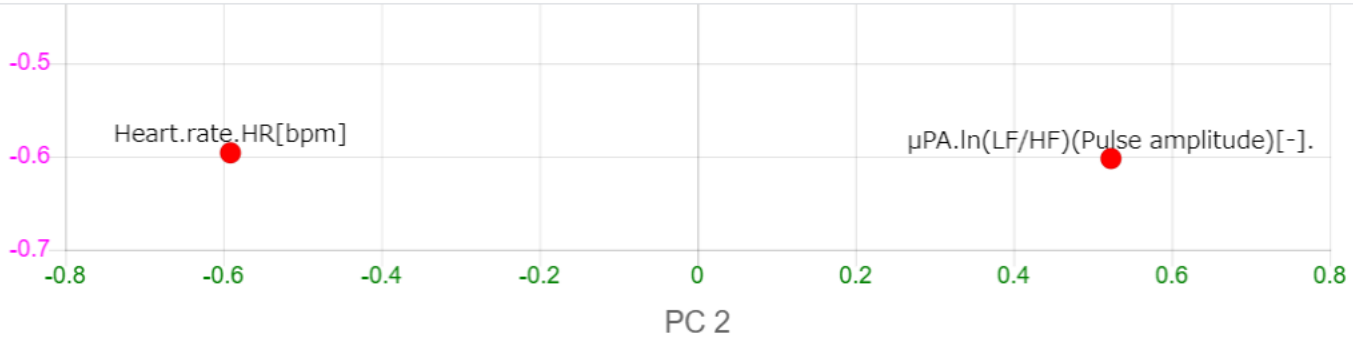
Distribution of factor loadings on the 1st principal component-2nd principal component plane

Distribution of factor loadings on the first principal component-3rd principal component plane

- If there are two variables selected, only the 1st principal component-2nd principal component plane will be displayed.
- Even if the selected variable is 4 or more, it will not be displayed after the 4th principal component.



Distribution of factor loadings on the 2nd principal component-3rd principal component plane



---------**Results of Factor Analysis**----------[Click to Open or Hide]

Click to show results from factor analysis

Show history again after reseting the conditions

Access to csv files and show figures...

[1]
#118th: 2020year10month4day 22hr9min47sec: mirror-2020-10-04T22-00-59-963Z [Click to Open or Hide]

[2]
#117th: 2020year10month4day 18hr25min4sec: デモ用mirror-2020-09-29T10-25-34-746Z [Click to Open or Hide]

[3]
#116th: 2020year10month2day 11hr16min53sec: mirror-2020-10-02T11-16-27-953Z [Click to Open or Hide]

Mirror Magical (Display Results)

mirror-magical.net/English/mirror_Show_Past_Data.php#History

アプリ　メディア要素の記録-...　MediaStream Recor...　Media Recor

Number of common factors＝ 3 ,
Promax rotation(oblique coordinate)

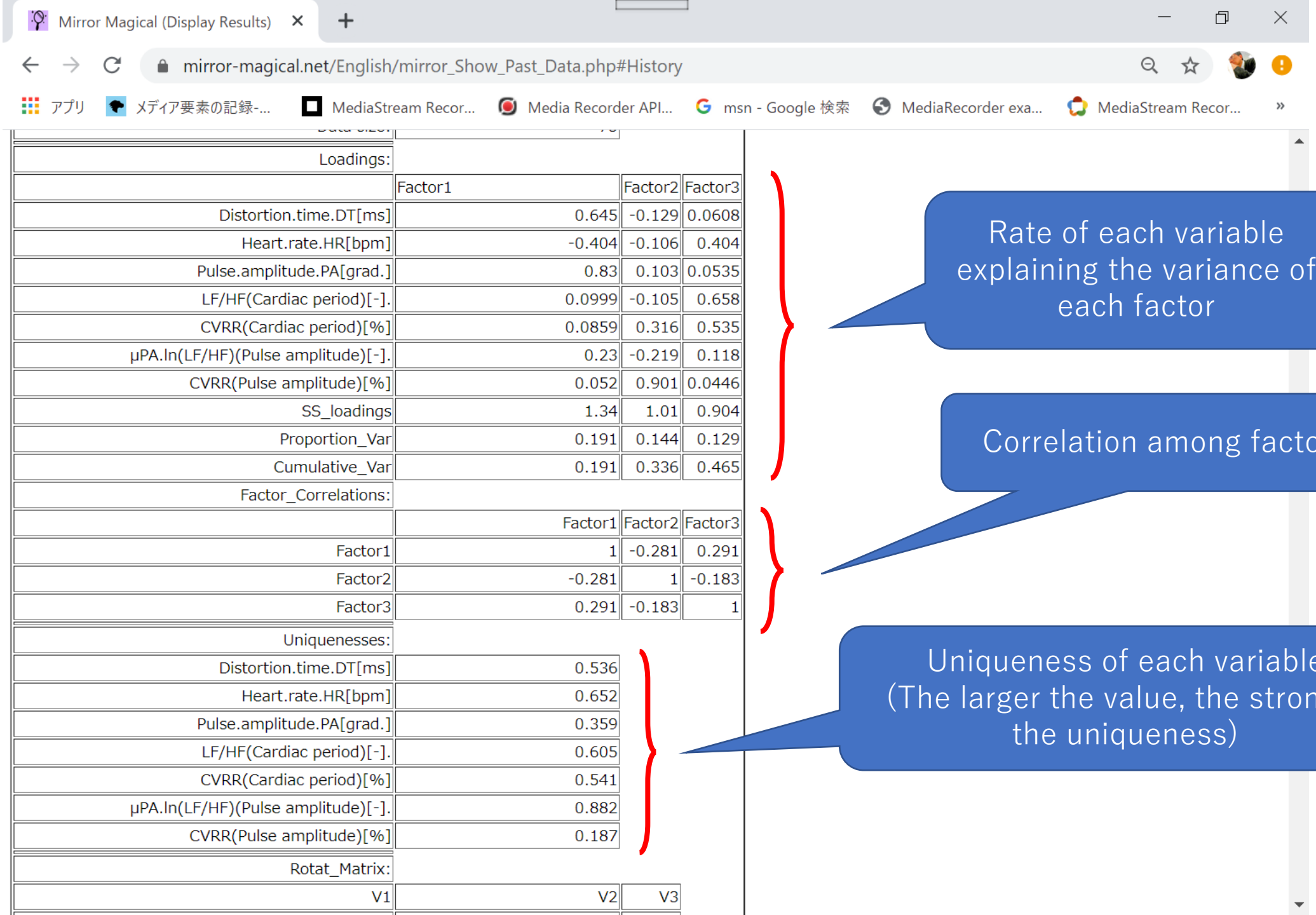
---------**Results of Factor Analysis**----------[Click to Open or Hide]

Factor Analysis...

- Function name in R-language: factanal()
- Number of common factors:3
- Rotaion method:Promax

Eigen values:	
1	2.08
2	1.49
3	1.09
4	0.826
5	0.605
6	0.464
7	0.442
Analysis:	factanal
Rotation:	promax
Method:	mle
Factors:	3
Data size:	75

Loadings:			
	Factor1	Factor2	Factor3
Distortion.time.DT[ms]	0.645	-0.129	0.0608
Heart.rate.HR[bpm]	-0.404	-0.106	0.404
Pulse.amplitude.PA[grad.]	0.83	0.103	0.0535
LF/HF(Cardiac period)[-].	0.0999	-0.105	0.658
CVRR(Cardiac period)[%]	0.0859	0.316	0.535



Loadings:			
	Factor1	Factor2	Factor3
Distortion.time.DT[ms]	0.645	-0.129	0.0608
Heart.rate.HR[bpm]	-0.404	-0.106	0.404
Pulse.amplitude.PA[grad.]	0.83	0.103	0.0535
LF/HF(Cardiac period)[-].	0.0999	-0.105	0.658
CVRR(Cardiac period)[%]	0.0859	0.316	0.535
μPA.ln(LF/HF)(Pulse amplitude)[-].	0.23	-0.219	0.118
CVRR(Pulse amplitude)[%]	0.052	0.901	0.0446
SS_loadings	1.34	1.01	0.904
Proportion_Var	0.191	0.144	0.129
Cumulative_Var	0.191	0.336	0.465
Factor_Correlations:			
	Factor1	Factor2	Factor3
Factor1	1	-0.281	0.291
Factor2	-0.281	1	-0.183
Factor3	0.291	-0.183	1
Uniquenesses:			
Distortion.time.DT[ms]	0.536		
Heart.rate.HR[bpm]	0.652		
Pulse.amplitude.PA[grad.]	0.359		
LF/HF(Cardiac period)[-].	0.605		
CVRR(Cardiac period)[%]	0.541		
μPA.ln(LF/HF)(Pulse amplitude)[-].	0.882		
CVRR(Pulse amplitude)[%]	0.187		
Rotat_Matrix:			
V1	V2	V3	

Rate of each variable explaining the variance of each factor

Correlation among factors

Uniqueness of each variable
(The larger the value, the stronger the uniqueness)

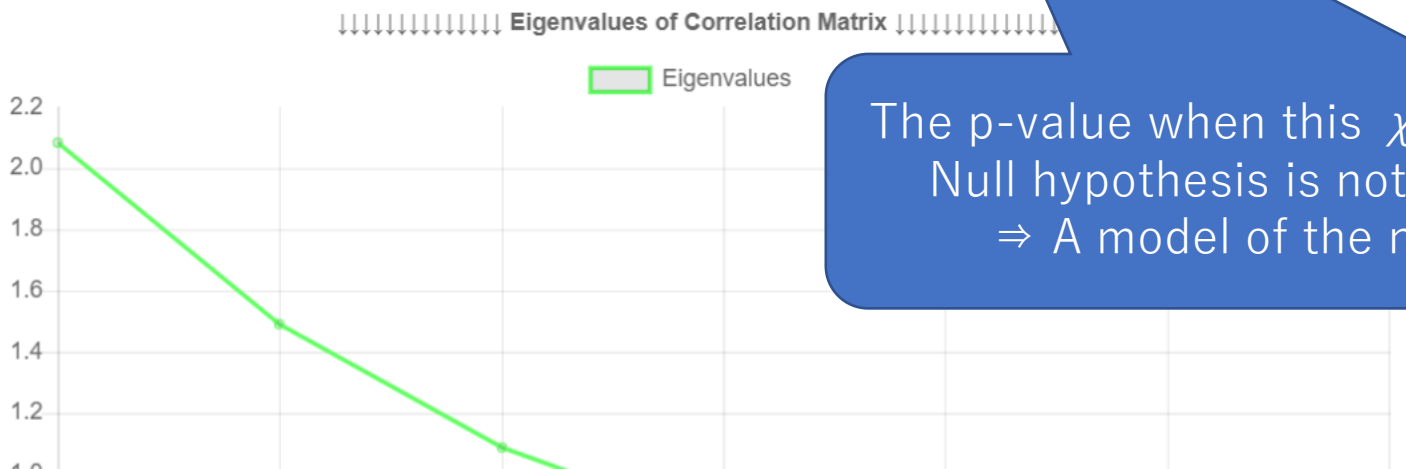
Mirror Magical (Display Results)

mirror-magical.net/English/mirror_Show_Past_Data.php#History

アプリ　メディア要素の記録-...　MediaStream Recor...　Media Recorder API...　msn - Google 検索

CVRR(Cardiac period)[%]	0.541	
μPA.ln(LF/HF)(Pulse amplitude)[-].	0.882	
CVRR(Pulse amplitude)[%]	0.187	
Rotat_Matrix:		
V1	V2	V3
0.863	-0.182	0.18
0.437	1.03	0.108
-0.475	0.0418	1.03
Result:		
Test of the hypothesis that 3 factors are sufficient.		
Chi-squared statisitic:	0.877	
Dgree of freedom:	3	
p-value of chi-squared statistic:	0.831 >= 0.05 Null hypothesis : Not rejected → The model holds.	

参考文献:「R 基本統計関数マニュアル 5.3 因子分析」 p.168 : https://cran.r-project.org/d ...uals-jp/Mase-Rstatman.pdf



Rotation matrix when rotating each factor coordinate

Chi-squared statistic on the null hypothesis that the variance of the factor model is equal to the variance of the data

The p-value when this $\chi 2$ statistic follows the $\chi 2$ distribution
Null hypothesis is not rejected if p-value is 0.05 or higher
⇒ A model of the number of common factors holds.

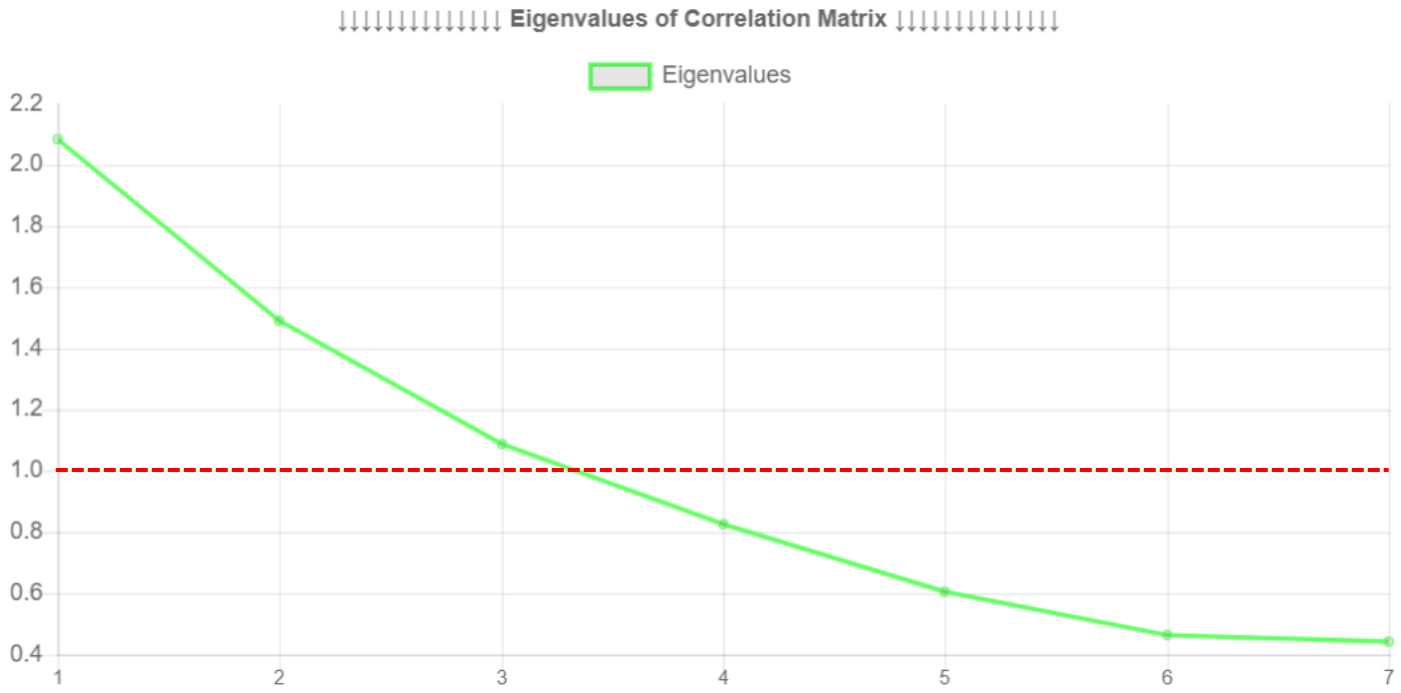
Mirror Magical (Display Results)

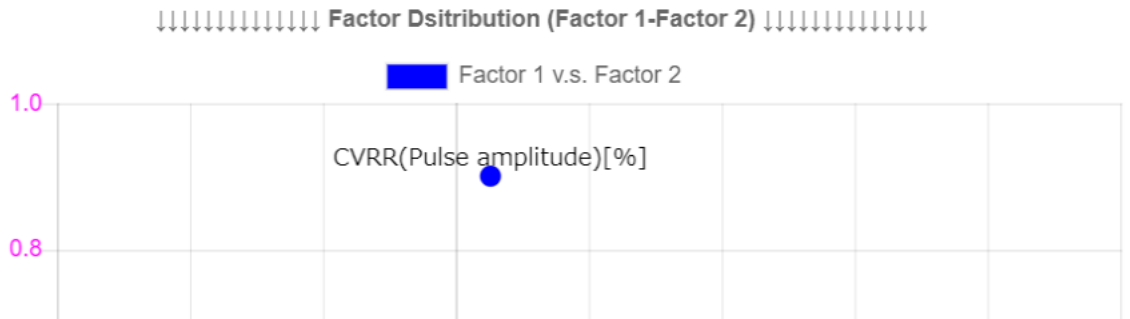
mirror-magical.net/English/mirror_Show_Past_Data.php#History

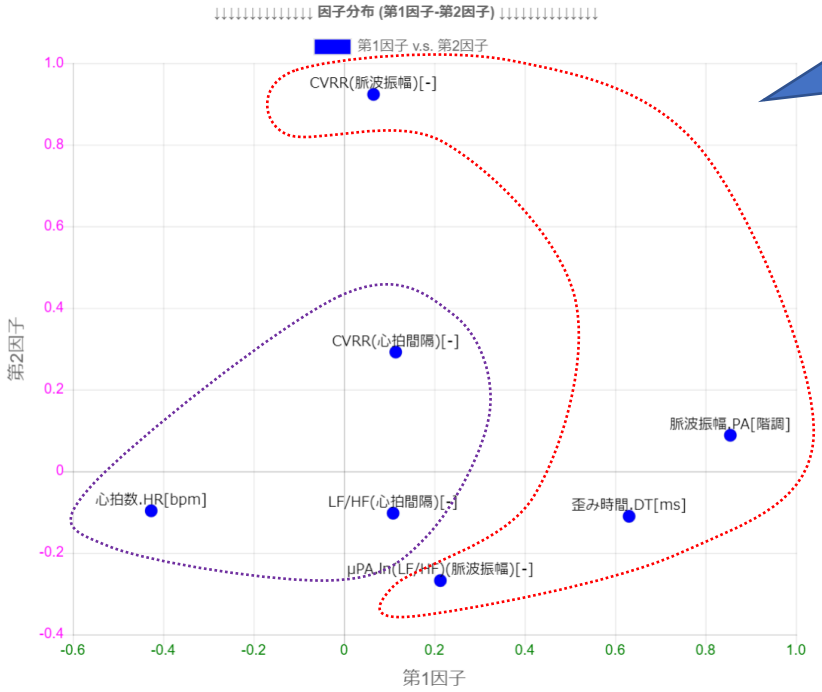
アプリ　MediaRecorder exa...　MediaStream Recor...

Determine the number of common factors based on the factors that have dominant eigenvalues.

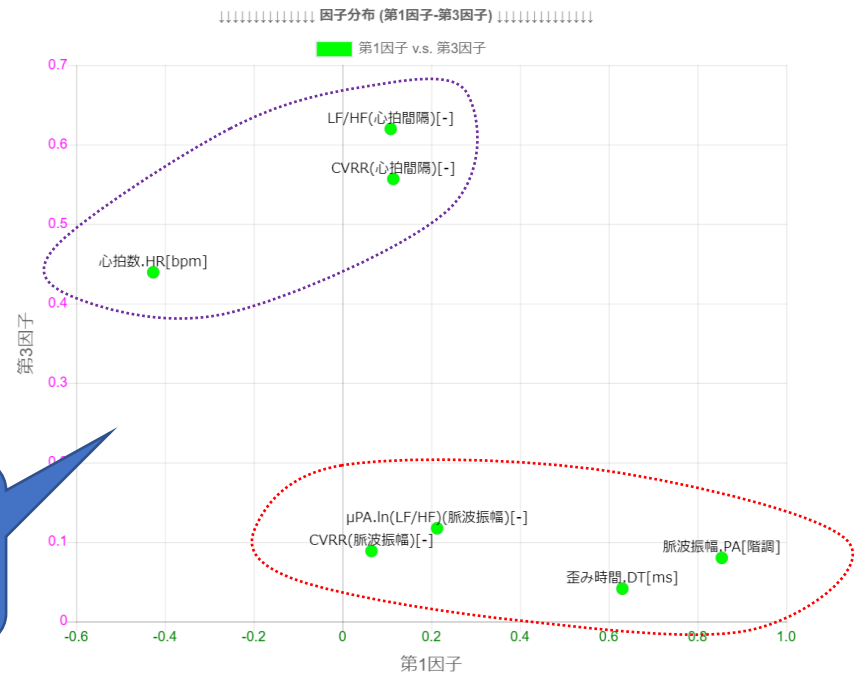
参考文献: [illegible]ase-Rstatman.pdf



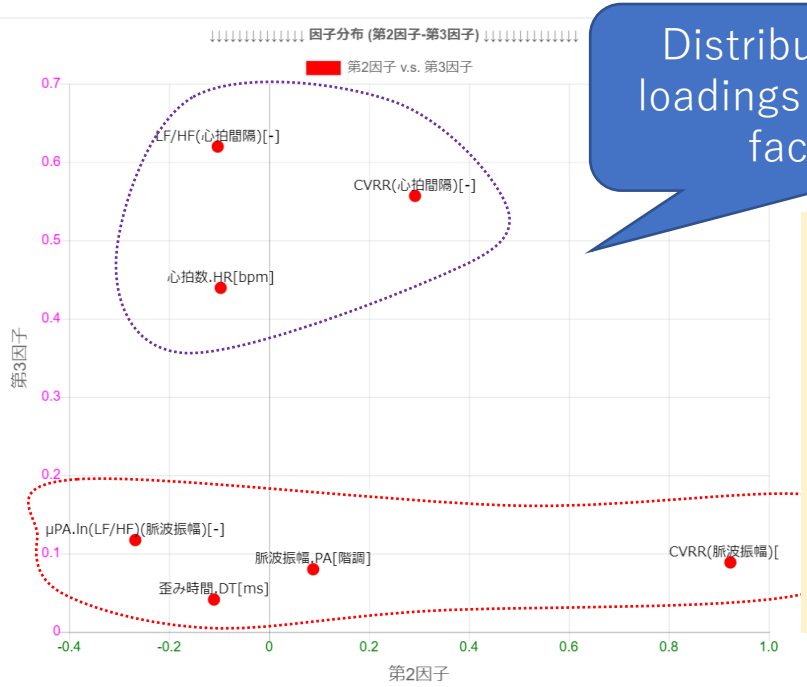




Distribution of factor loadings in the 1st-2nd factor plane



Distribution of factor loadings in the 1st- 3 rd factor plane

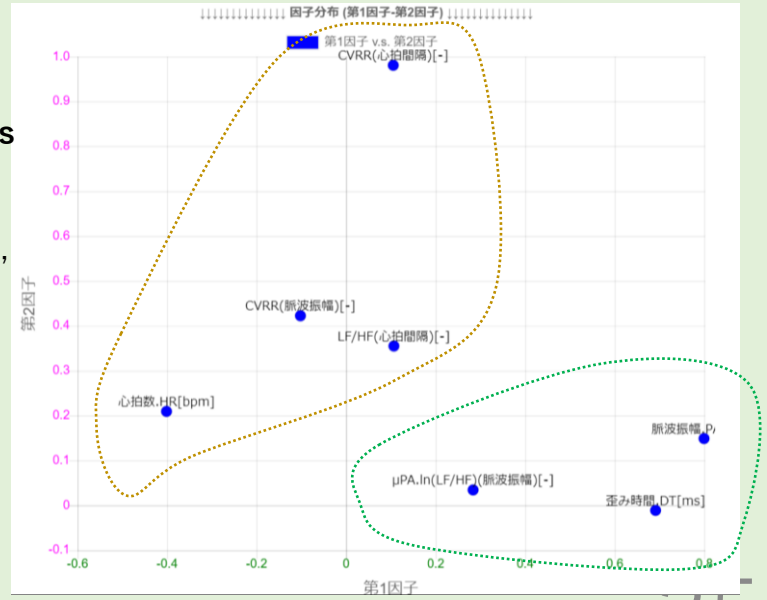


Distribution of factor loadings in the 2nd-3rd factor plane

- In 3D space, there is a possibility that it can be separated into a pulse wave amplitude group (red frame) and a heart rate interval group (purple frame).

Distribution when the number of common factors is 2

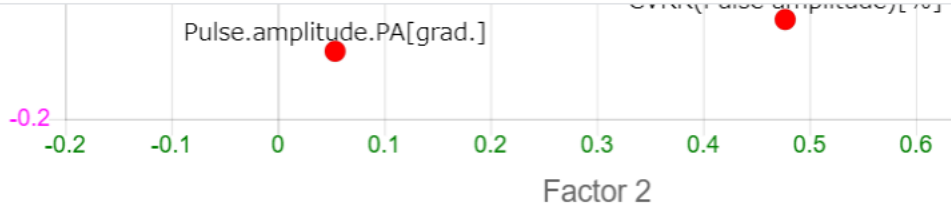
(In this example, a model with 2 common factors also holds)



Mirror Magical (Display Results)

mirror-magical.net/English/mirror_Show_Past_Data.php#History

アプリ　メディア要素の記録-...　MediaStream Recor...　Media Recorder API...　msn - Google 検索　MediaRecorder exa...　MediaStream Recor...



Click to return to the page 3 and reset

Show history again after reseting the conditions

Access to csv files and show figures...

[1] #118th: 2020year10month4day 22hr9min47sec: mirror-2020-10-04T22-00-59-963Z [Click to Open or Hide]

[2] #117th: 2020year10month4day 18hr25min4sec: デモ用mirror-2020-09-29T10-25-34-746Z [Click to Open or Hide]

[3] #116th: 2020year10month2day 11hr16min53sec: mirror-2020-10-02T11-16-27-953Z [Click to Open or Hide]

[4] #115th: 2020year9month30day 14hr51min21sec: お試し版（掌付き）2020-7-29 [Click to Open or Hide]

[5] #114th: 2020year9month30day 14hr50min4sec: お試し版（掌付き）2020-7-29 [Click to Open or Hide]

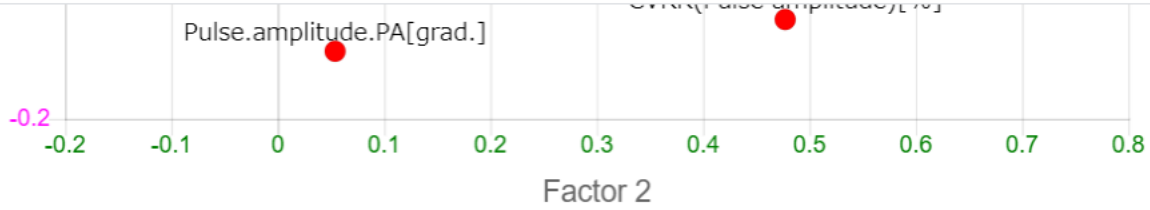
[6] #113th: 2020year9month30day 11hr51min22sec: mirror-2020-09-30T11-51-00-673Z [Click to Open or Hide]

[7] #112th: 2020year9month30day 11hr23min23sec: お試し2020-7-29 [Click to Open or Hide]

Mirror Magical (Display Results)

mirror-magical.net/English/mirror_Show_Past_Data.php#History

アプリ　メディア要素の記録-...　MediaStream Recor...　Media Recorder API...　msn - Google 検索　MediaRecorder exa...　MediaStream Recor...



Show history again after reseting the conditions

Access to csv files and show figures...

[1] #118th: 2020year10month4day 22hr9min47sec: mirror-2020-10-04T22-00-59-963Z [Click to Open or Hide]

[2] #117th: 2020year10month4day 18hr25min4sec: デモ用mirror-2020-09-29T10-25-34-746Z [Click to Open or Hide]

[3] #116th: 2020year10month2day 11hr16min53sec: mirror-2020-10-02T11-16-27-953Z [Click to Open or Hide]

[4] #115th: 2020year9month30day 14hr51min21sec: お試し版（掌付き）2020-7-29 [Click to Open or Hide]

[5] #114th: 2020year9month30day 14hr50min4sec: お試し版（掌付き）2020-7-29 [Click to Open or Hide]

[6] #113th: 2020year9month30day 11hr51min22sec: mirror-2020-09-30T11-51-00-673Z [Click to Open or Hide]

[7] #112th: 2020year9month30day 11hr23min23sec: お試し2020-7-29 [Click to Open or Hide]

Click to see details of this data

Mirror Magical (Display Results)

mirror-magical.net/English/mirror_Show_Past_Data.php#History

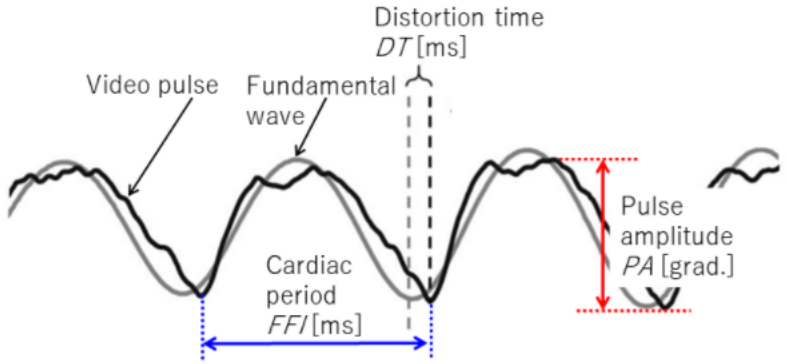
[3]

#116th: 2020year10month2day 11hr16min53sec: mirror-2020-10-02T11-16-27-953Z [Click to Open or Hide]

Show radar chart and mean values

Delete this data

Mean values of variables...



Variable name	Mean value	Unit	SD
Heart rate HR around 70 bpm for adults at rest HR[bpm]=60000/FFI[ms]	70	bpm	±6.64
Pulse amplitude PA Mean value of pulse wave amplitude (difference between peak and valley) → The larger it is, the better the blood circulation (When the camera exposure and lighting environment are constant.)	0.527	grad.	±0.0967
Distortion time DT Difference from the fundamental wave of the valley time that correlates with blood pressure. → There is a correlation that the longer the blood pressure, the lower the blood pressure. [Patent No.6620999]	74.1	ms	±50.2
SN-Ratio(excluding LF) Signal-to-noise ratio (larger is more like a pulse wave)	0.765	-	±0.0756

The mean value of each variable in this data is displayed

Mirror Magical (Display Results)

mirror-magical.net/English/mirror_Show_Past_Data.php#History

アプリ　メディア要素の記録-...　MediaStream Recor...　Media Recorder API...

Click to redisplay the analysis result of this data (radar chart, etc.)

[3]

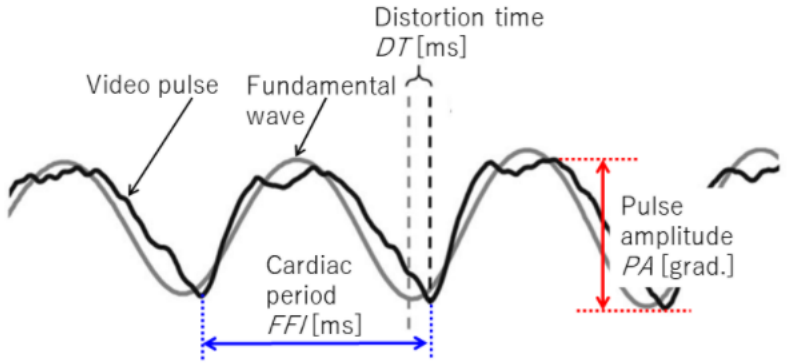
#116th: 2020year10month2day 11hr16min53sec: mirror 10-02T11-16-27-953Z [Click to Open or Hide]

Show radar chart and mean values

Delete this data

Click to delete this data from the database.

Mean values of variables...



Variable name	Mean value	Unit	SD
Heart rate HR around 70 bpm for adults at rest HR[bpm]=60000/FFI[ms]	70	bpm	±6.64
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Distortion time DT Difference from the fundamental wave of the valley time that correlates with blood pressure. → There is a correlation that the longer the blood pressure, the lower the blood pressure. [Patent No.6620999]	74.1	ms	±50.2
SN-Ratio(excluding LF) Signal-to-noise ratio (larger is more like a pulse wave)	0.765	-	±0.0756

Mirror Magical (Display Results)

mirror-magical.net/English/mirror_Show_Past_Data.php#date_1

アプリ　メディア要素の記録-...　MediaStream Recor...　Media Recorder API...　msn - Google 検索　MediaRecorder exa...　MediaStream Recor...

#117th: 2020year10month4day 18hr25min4sec:　デモ用mirror-2020-09-29T10-25-34-746Z　[Click to Open or Hide]

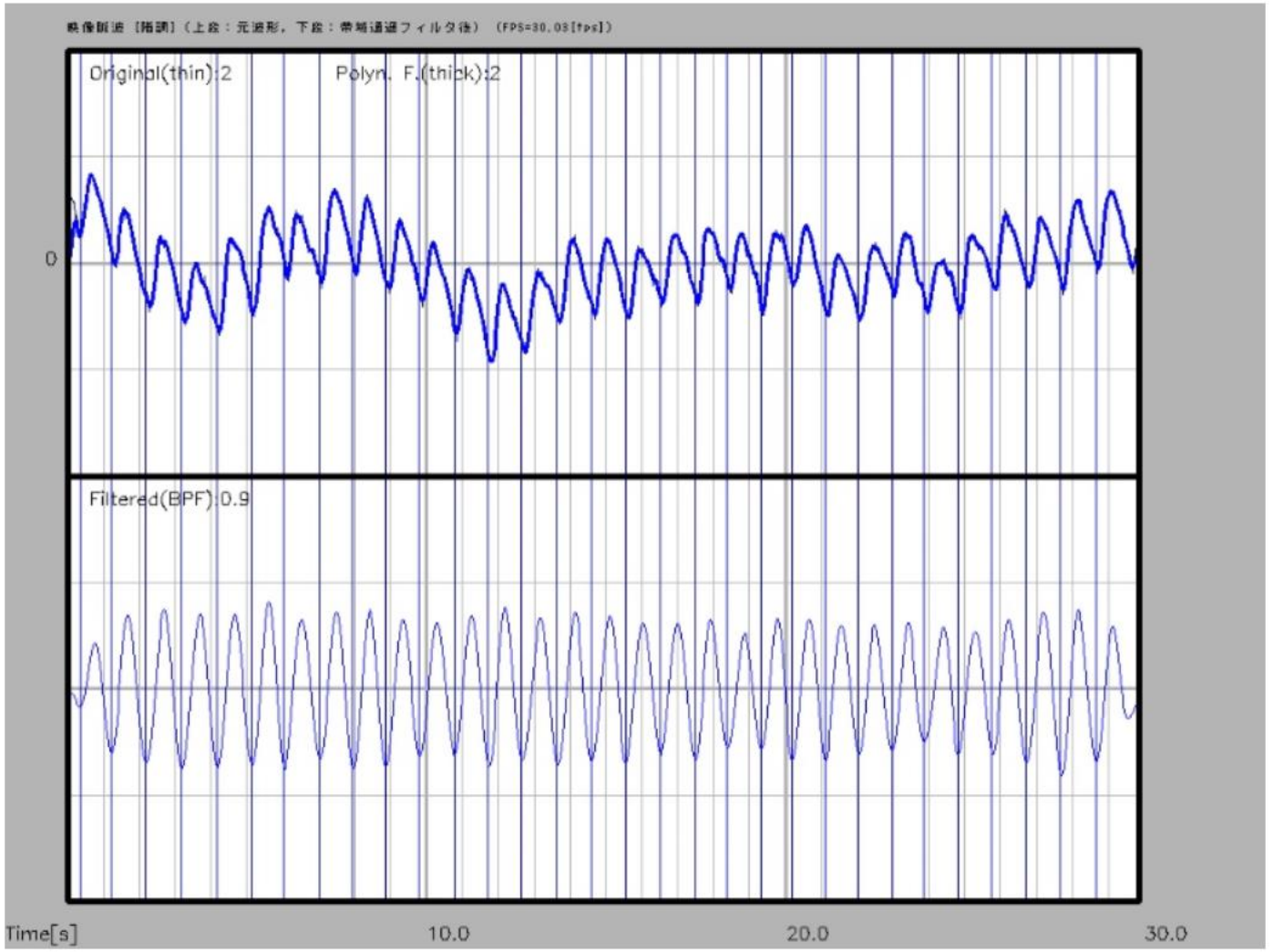


Fig. 1 : Video pulse [grad.] (Upper: Raw data, Lower: Band-pass filtered)

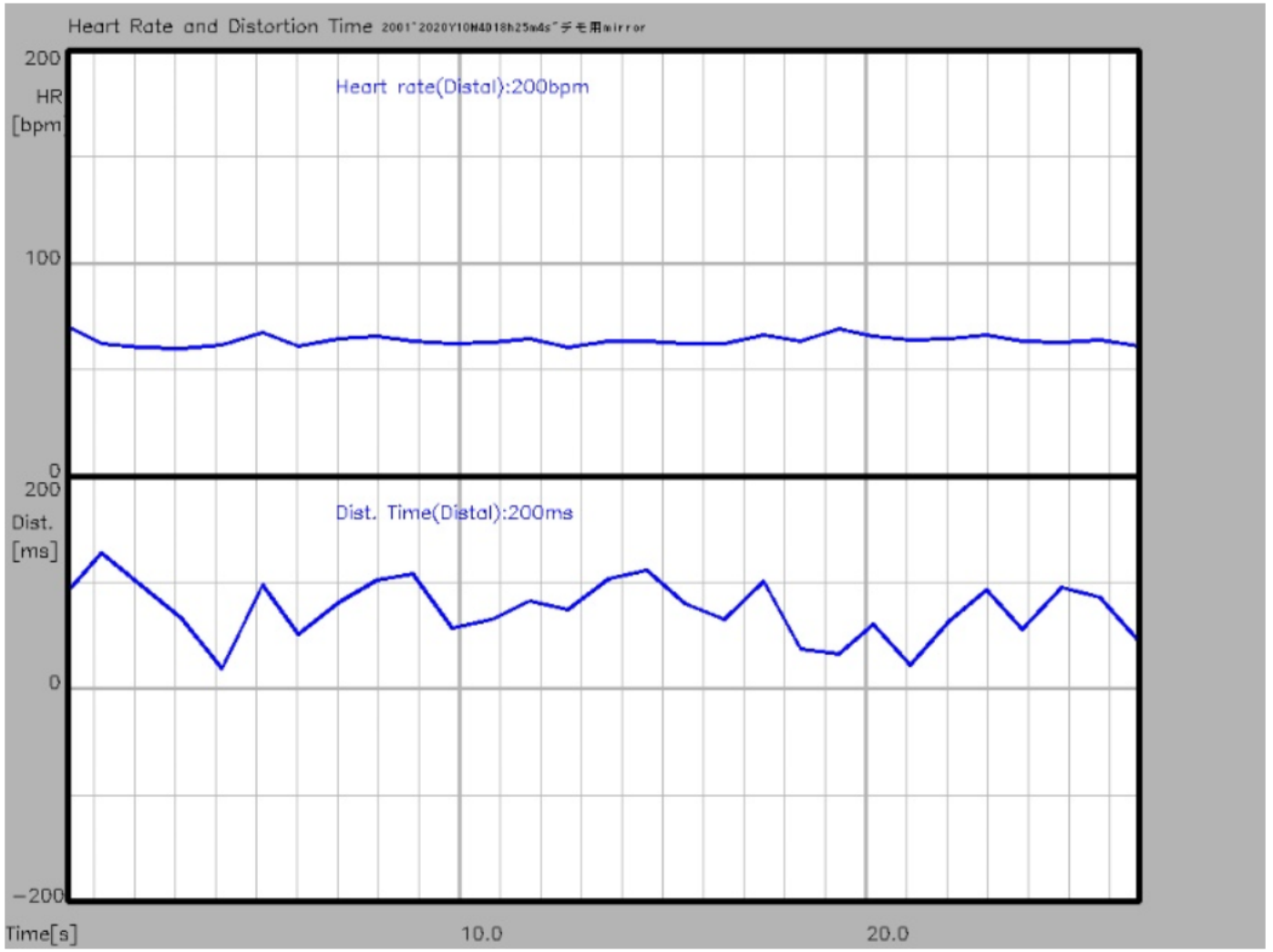


Fig. 2 : Heart Rate, HR [bpm](Upper) and Distortion Time, DT [ms](Lower)

Fig. 3 : Signal-to-Noise Ratio (The minimum value should be over 0.7.)

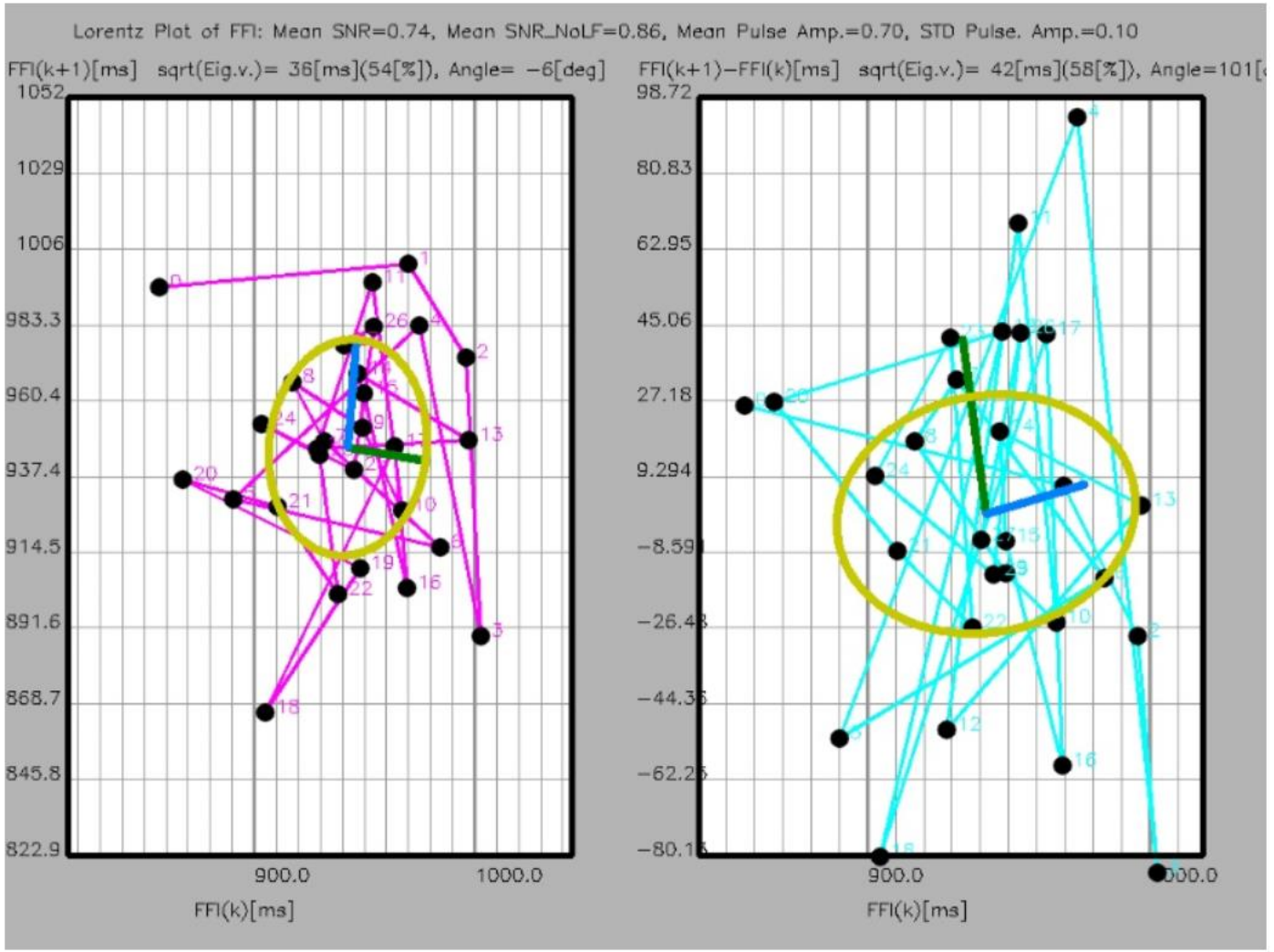


Fig. 4 : Lorentz plot (Left: FFI(k) v.s. FFI(k+1), Right: FFI(k) v.s. FFI(k+1)-FFI(k))

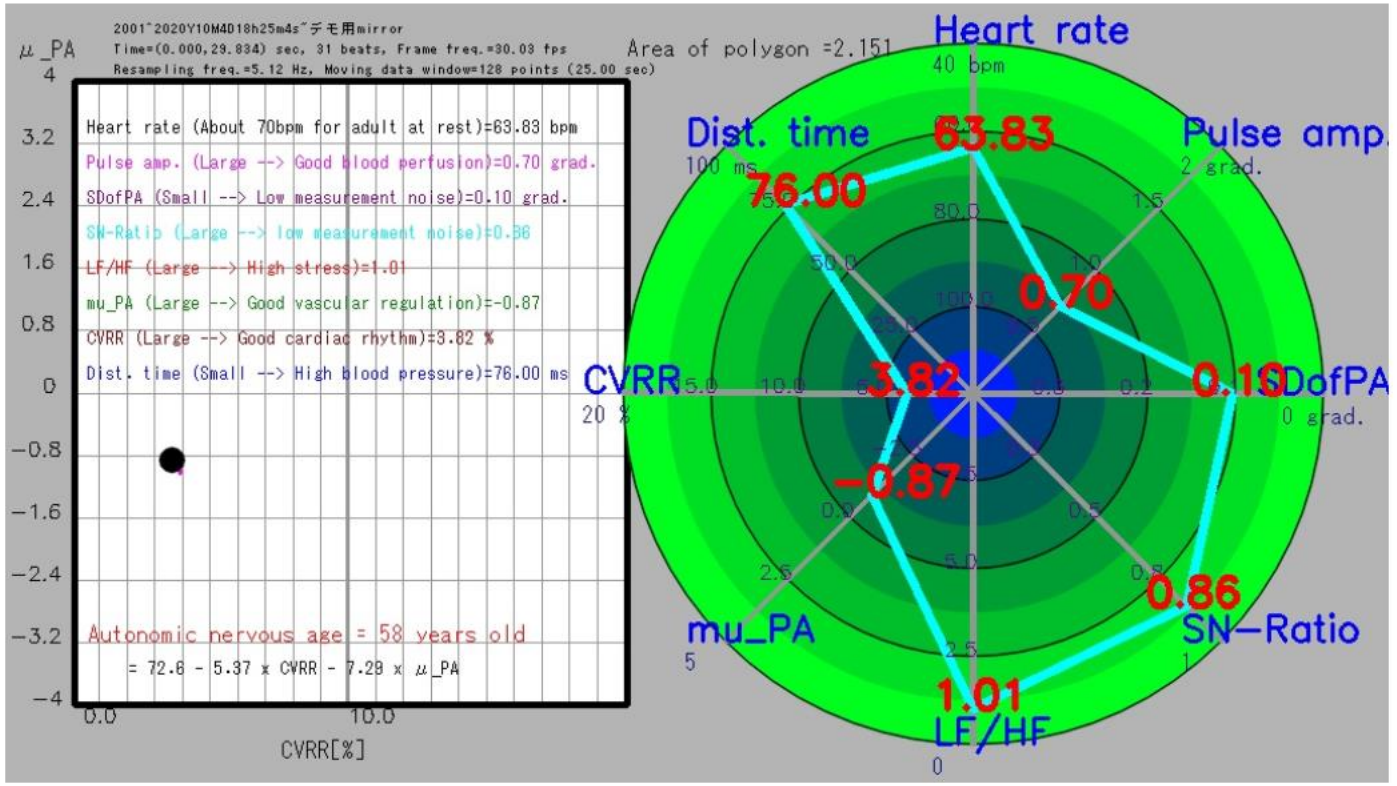
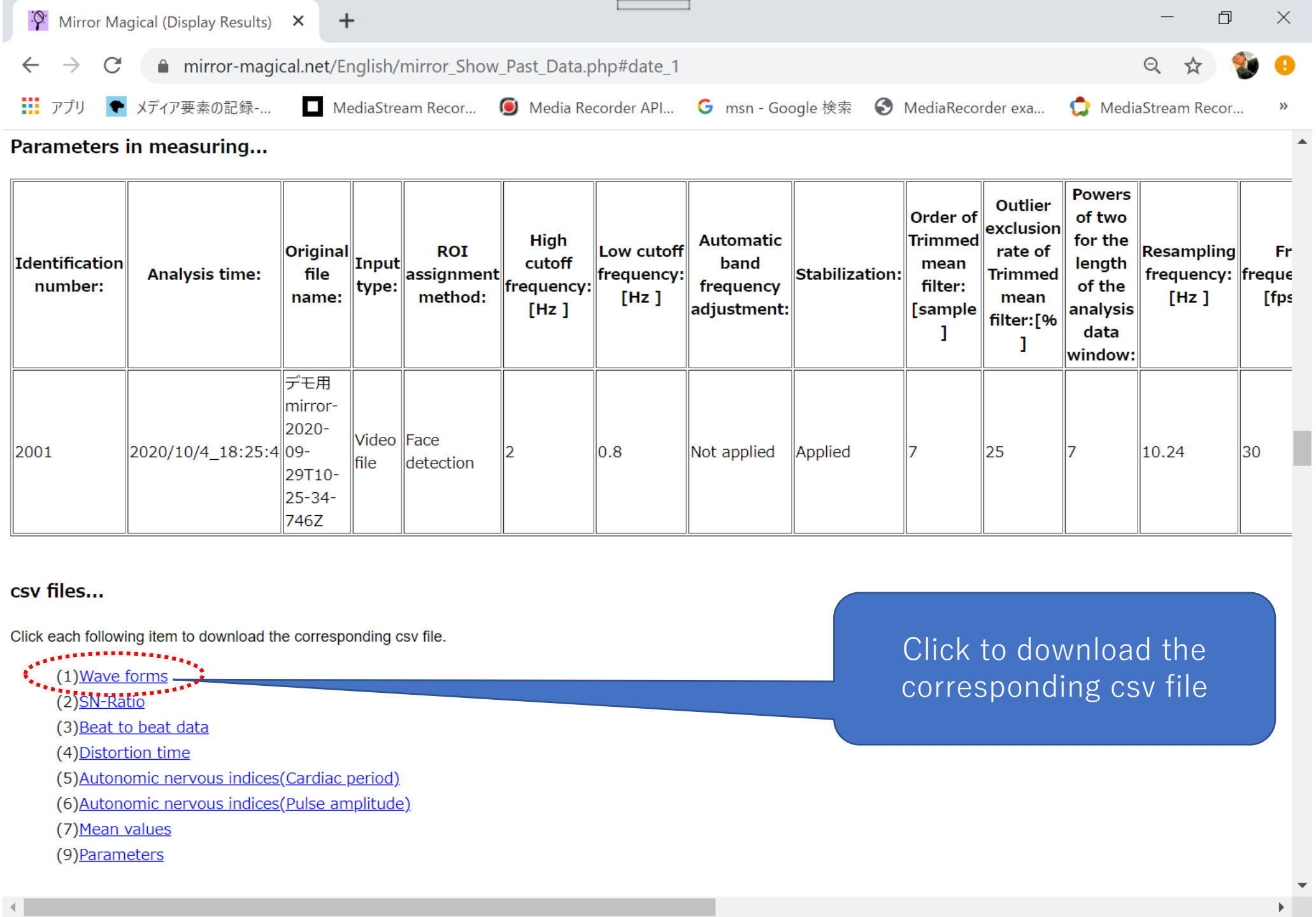


Fig. 5： Radar chart

Hide radar chart and mean values

Delete this data

Mean values of variables...


Mirror Magical (Display Results)
mirror-magical.net/English/mirror_Show_Past_Data.php#date_1
アプリ
メディア要素の記録-...
MediaStream Recor...
Media Recorder API...
msn - Google 検索
MediaRecorder exa...
MediaStream Recor...
Parameters in measuring...
Identification number:
Analysis time:
Original file name:
Input type:
ROI assignment method:
High cutoff frequency: [Hz]
Low cutoff frequency: [Hz]
Automatic band frequency adjustment:
Stabilization:
Order of Trimmed mean filter: [sample]
Outlier exclusion rate of Trimmed mean filter:[%]
Powers of two for the length of the analysis data window:
Resampling frequency: [Hz]
Fr freque [fps
2001
2020/10/4_18:25:4
デモ用 mirror-2020-09-29T10-25-34-746Z
Video file
Face detection
2
0.8
Not applied
Applied
7
25
7
10.24
30
csv files...
Click each following item to download the corresponding csv file.
(1)Wave forms
(2)SN-Ratio
(3)Beat to beat data
(4)Distortion time
(5)Autonomic nervous indices(Cardiac period)
(6)Autonomic nervous indices(Pulse amplitude)
(7)Mean values
(9)Parameters
Click to download the corresponding csv file

Mirror Magical (Display Results)

mirror-magical.net/English/mirror_Show_Past_Data.php#date_1

アプリ　メディア要素の記録-...　MediaStream Recor...　Media Recorder API...　msn - Google 検索　MediaRecorder exa...　MediaStream Recor...

Parameters in measuring...

Identification number:	Analysis time:	Original file name:	Input type:	ROI assignment method:	High cutoff frequency: [Hz]	Low cutoff frequency: [Hz]	Automatic band frequency adjustment:	Stabilization:	Order of Trimmed mean filter: [sample]	Outlier exclusion rate of Trimmed mean filter:[%]	Powers of two for the length of the analysis data window:	Resampling frequency: [Hz]	Fr freque [fps
2001	2020/10/4_18:25:4	デモ用 mirror-2020-09-29T10-25-34-746Z	Video file	Face detection	2	0.8	Not applied	Applied	7	25	7	10.24	30

csv files...

Click each following item to download the corresponding csv file.

(1)Wave forms
(2)SN-Ratio
(3)Beat to beat data
(4)Distortion time
(5)Autonomic nervous indices(Cardiac period)
(6)Autonomic nervous indices(Pulse amplitude)
(7)Mean values

Open the downloaded file in Excel

2001^2020Y10M4....csv

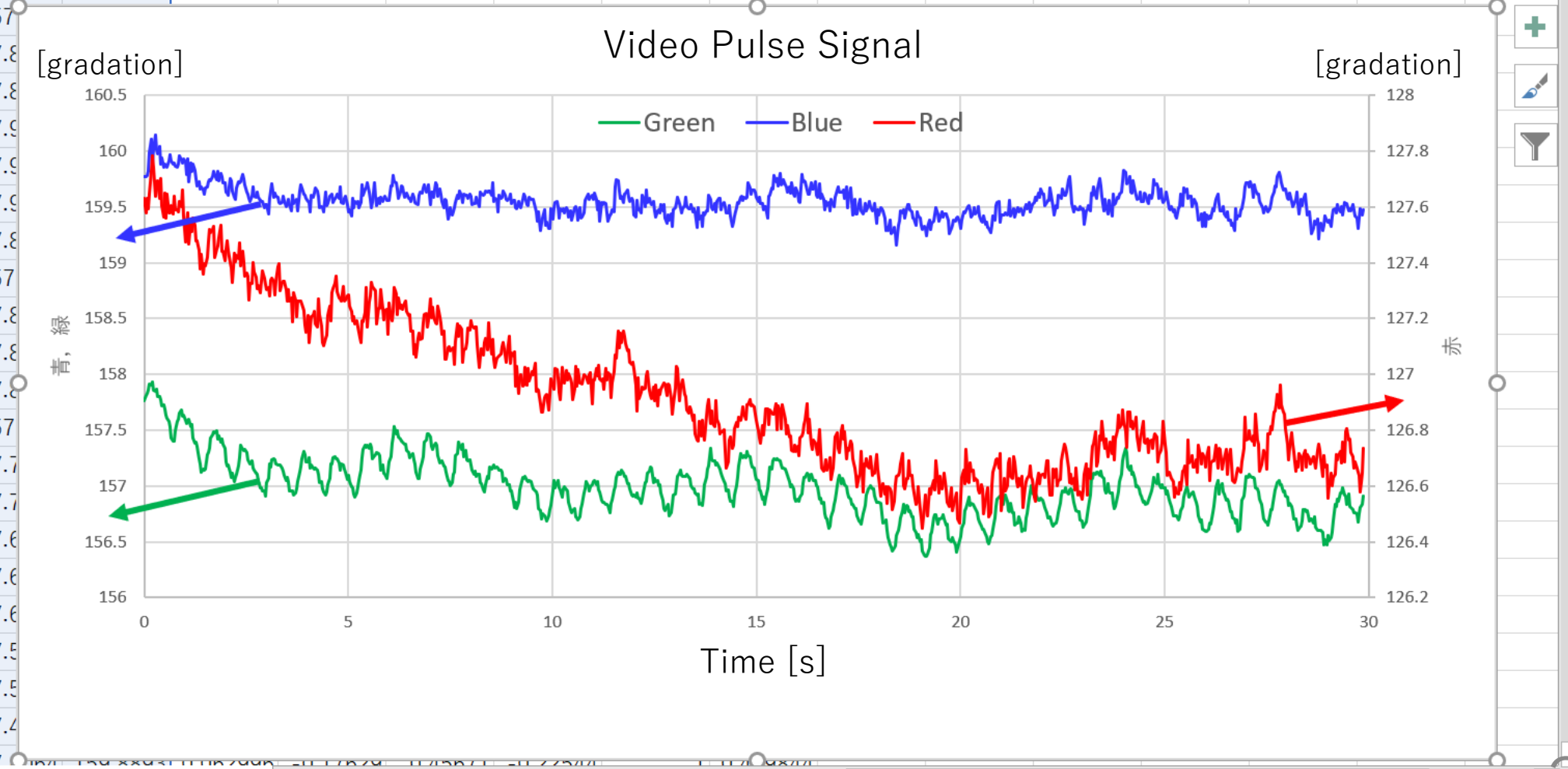
すべて表示

2001^2020Y9M5D12h15m15s_mirror-2020-09-05T12-13-27… グラフ ツール yoshizawa makoto YM

ファイル ホーム 挿入 ページ レイアウト 数式 データ 校閲 表示 ヘルプ デザイン 書式 何をしますか 共有

グラフ 1

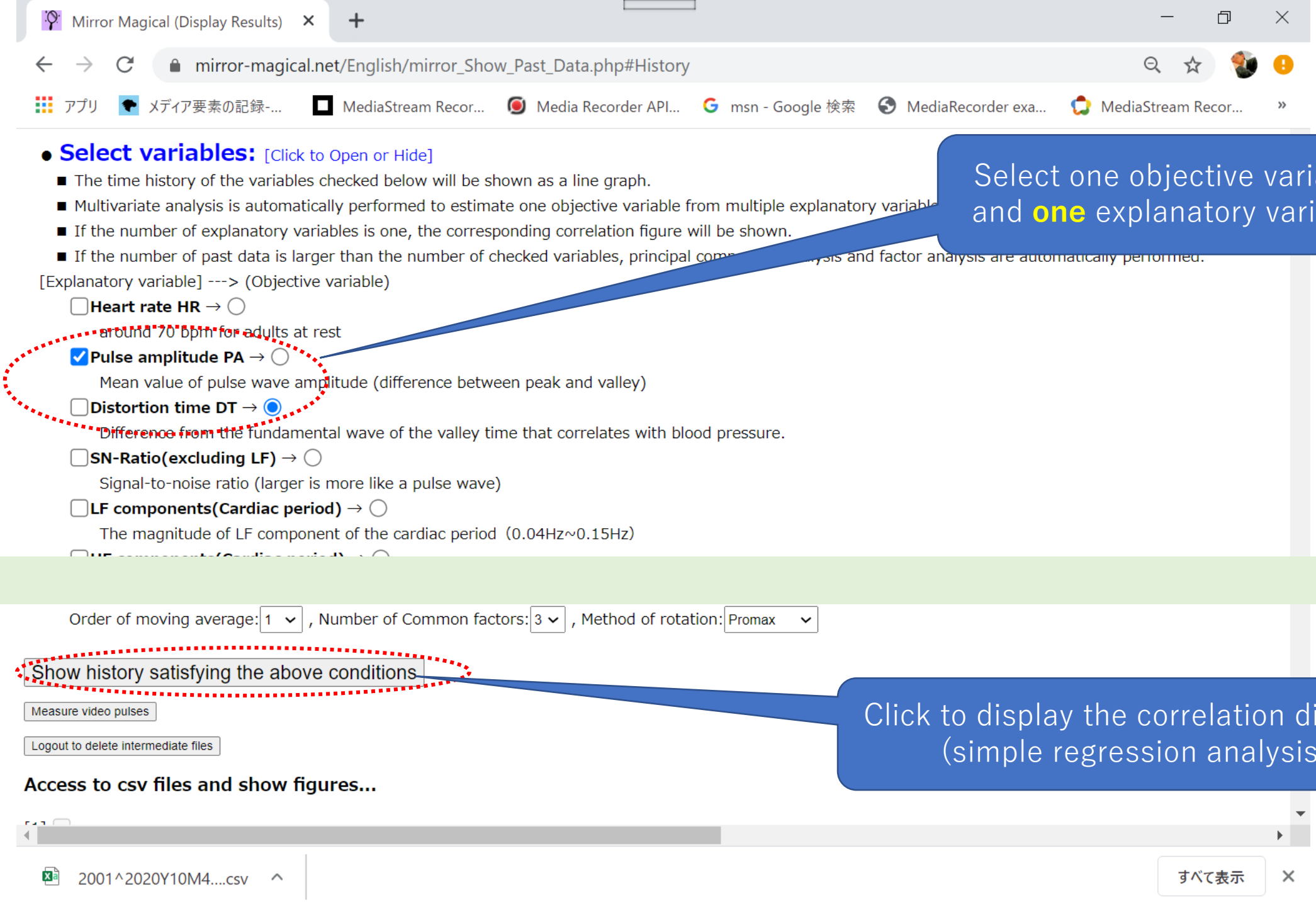
	A	B	C	D	E	F	G	H	I	J
1	Time[s]	Red	Green	Blue	Chromina	Chromina	Polyn F	Polyn & B	Foots	G supp. fluct.
2	0.000333	127.6325	157.7646	159.7704	0.455372	-0.17629	0	-0.20046	1	0.7754
3	0.033667	127.5806	157							
4	0.067	127.6306	157.8							
5	0.100333	127.5924	157.8							
6	0.133667	127.648	157.9							
7	0.167	127.7265	157.9							
8	0.200333	127.7826	157.9							
9	0.233667	127.7445	157.8							
10	0.267	127.6392	157							
11	0.300333	127.6891	157.8							
12	0.333667	127.6955	157.8							
13	0.367	127.6325	157.8							
14	0.400333	127.7033	157							
15	0.433667	127.6065	157.7							
16	0.467	127.5644	157.7							
17	0.500333	127.6502	157.6							
18	0.533667	127.5602	157.6							
19	0.567	127.6451	157.6							
20	0.600333	127.5807	157.5							
21	0.633667	127.5795	157.5							
22	0.667	127.6065	157.4							
23	0.700333	127.576	157							



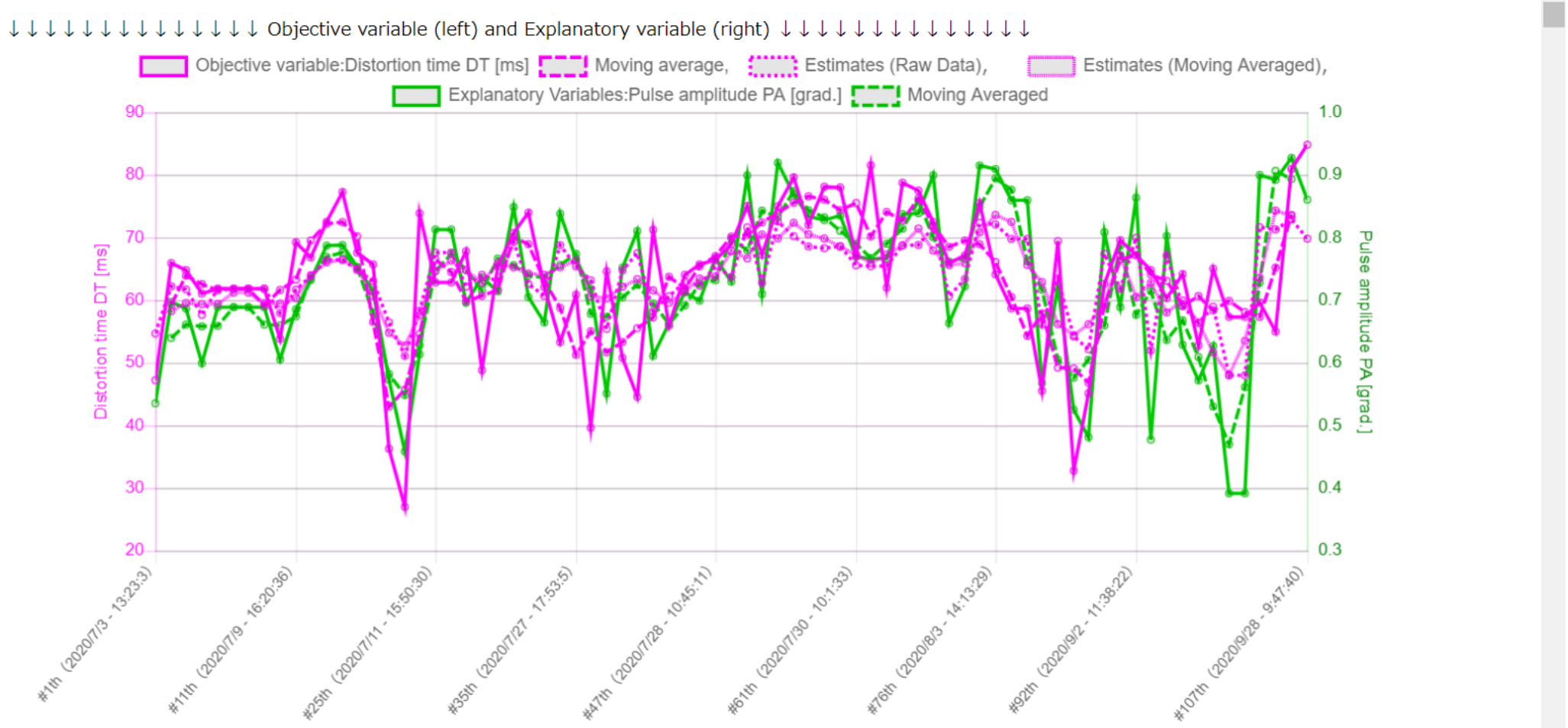
2001^2020Y9M5D12h15m15s_mirror-

準備完了 平均: 114.5988922 データの個数: 3592 合計: 411180.8253 100%

The case of a correlation diagram between 1 variable and 1 variable (Simple regression analysis)


Mirror Magical (Display Results)
mirror-magical.net/English/mirror_Show_Past_Data.php#History
アプリ
メディア要素の記録-...
MediaStream Recor...
Media Recorder API...
msn - Google 検索
MediaRecorder exa...
MediaStream Recor...
Select variables: [Click to Open or Hide]
The time history of the variables checked below will be shown as a line graph.
Multivariate analysis is automatically performed to estimate one objective variable from multiple explanatory variable
If the number of explanatory variables is one, the corresponding correlation figure will be shown.
If the number of past data is larger than the number of checked variables, principal com
ysis and factor analysis are automatically performed.
[Explanatory variable] ---> (Objective variable)
Heart rate HR →
around 70 bpm for adults at rest
Pulse amplitude PA →
Mean value of pulse wave amplitude (difference between peak and valley)
Distortion time DT →
Difference from the fundamental wave of the valley time that correlates with blood pressure.
SN-Ratio(excluding LF) →
Signal-to-noise ratio (larger is more like a pulse wave)
LF components(Cardiac period) →
The magnitude of LF component of the cardiac period（0.04Hz~0.15Hz）
Order of moving average: 1 , Number of Common factors: 3 , Method of rotation: Promax
Show history satisfying the above conditions
Measure video pulses
Logout to delete intermediate files
Access to csv files and show figures...
2001^2020Y10M4....csv
すべて表示
Select one objective variable and one explanatory variable
Click to display the correlation diagram (simple regression analysis)

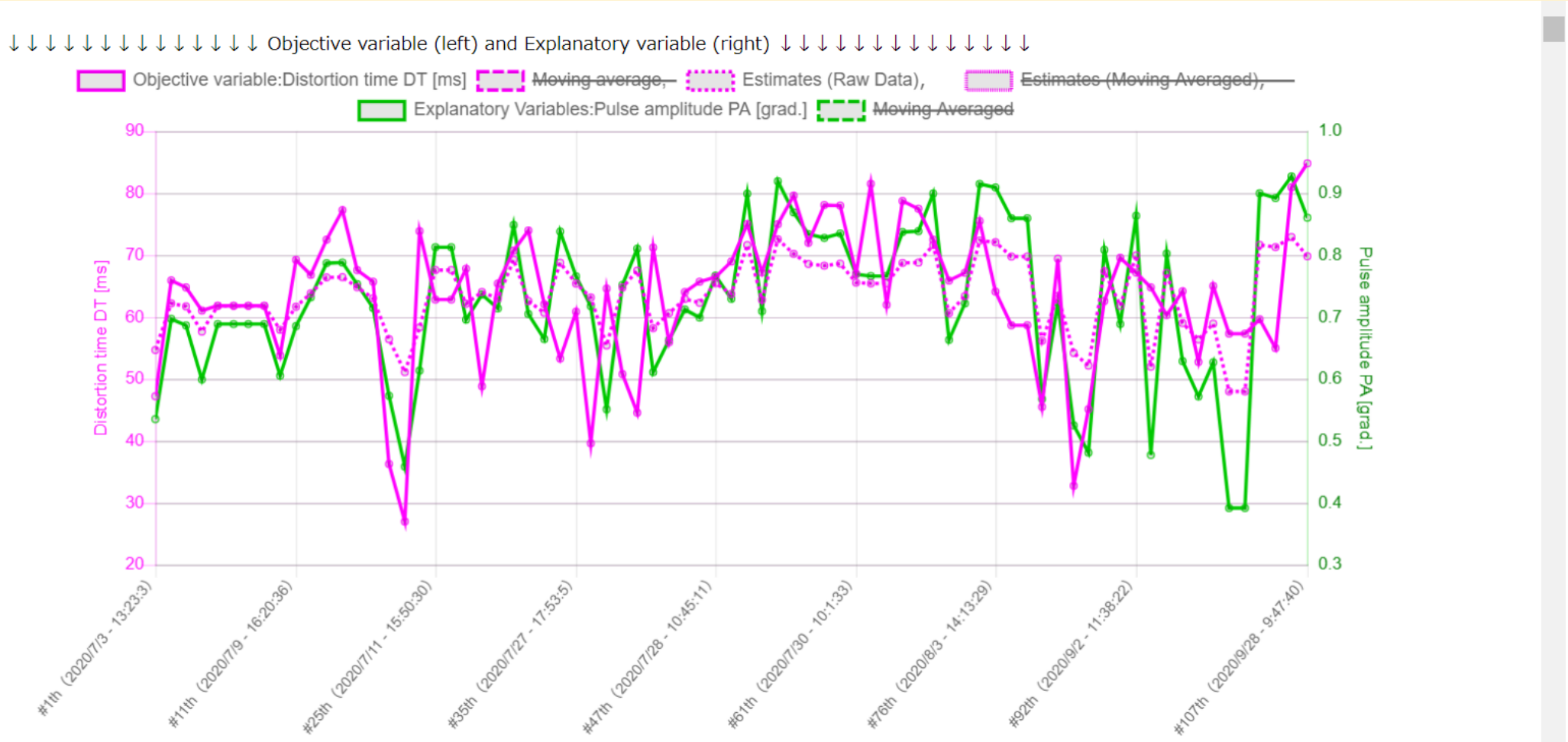
The objective variable, its estimated value, explanatory variable, objective variable [moving average], its estimated value, and explanatory variable [moving average] are displayed.



Mirror Magical (Display Results)

By clicking on the legend of unwanted variables,

Objective variable: strain time, its estimated value, explanatory variable: only pulse wave amplitude is displayed.

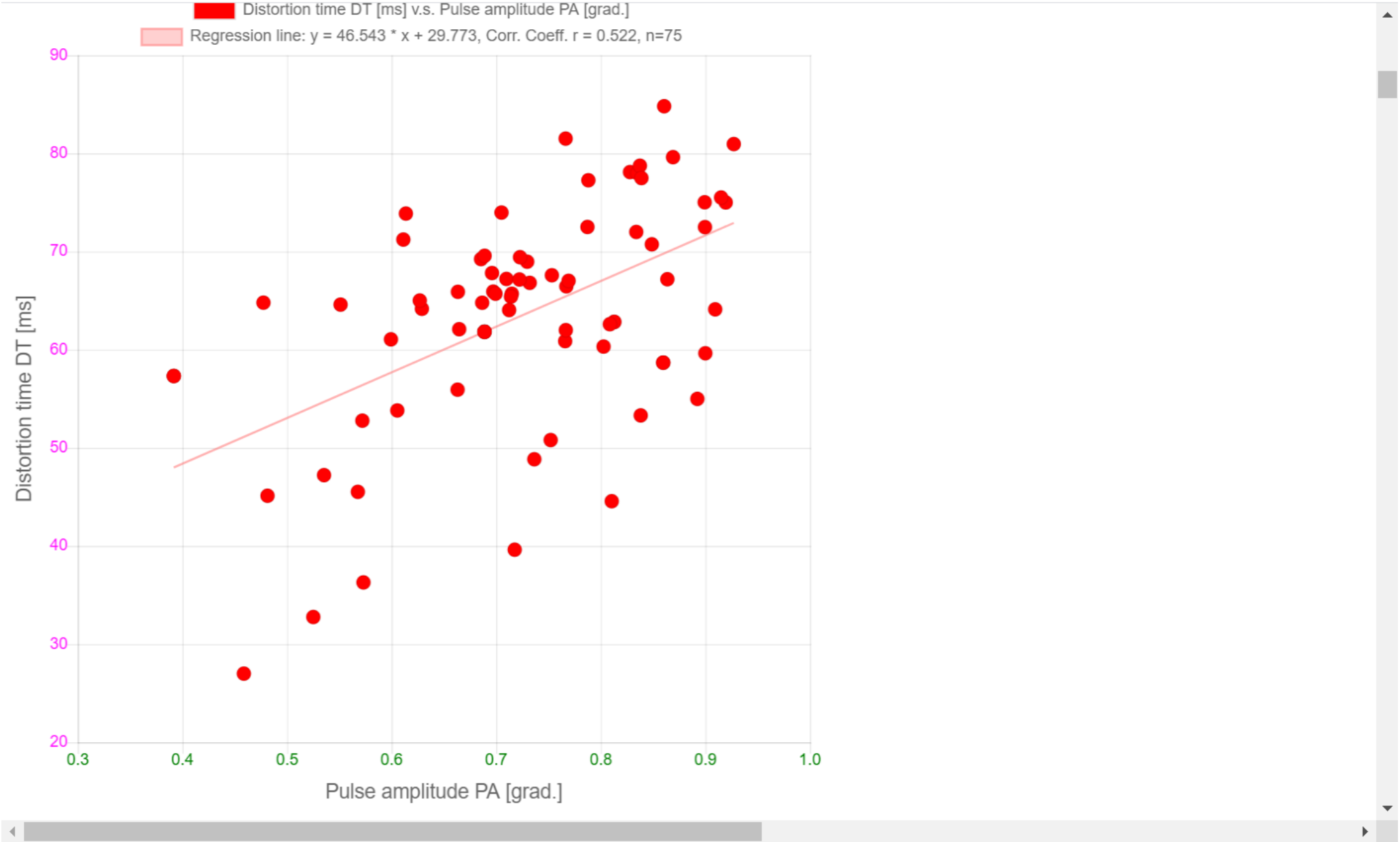


2001^2020Y10M4....csv

すべて表示

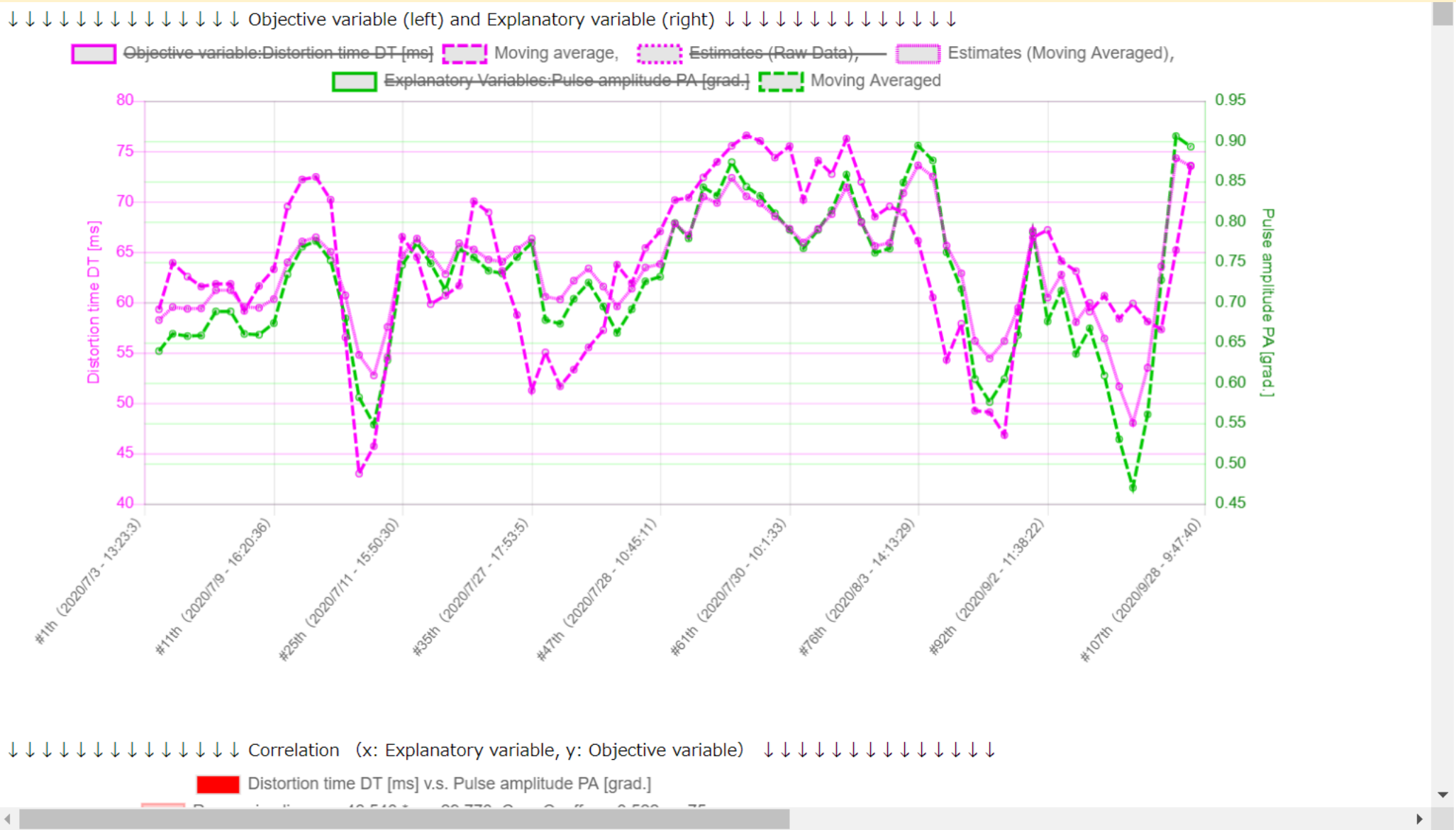
Correlation diagram is displayed.

Vertical axis: Objective variable (distortion time), horizontal axis: Explanatory variable (pulse wave amplitude)



By clicking the legend of unnecessary variables,

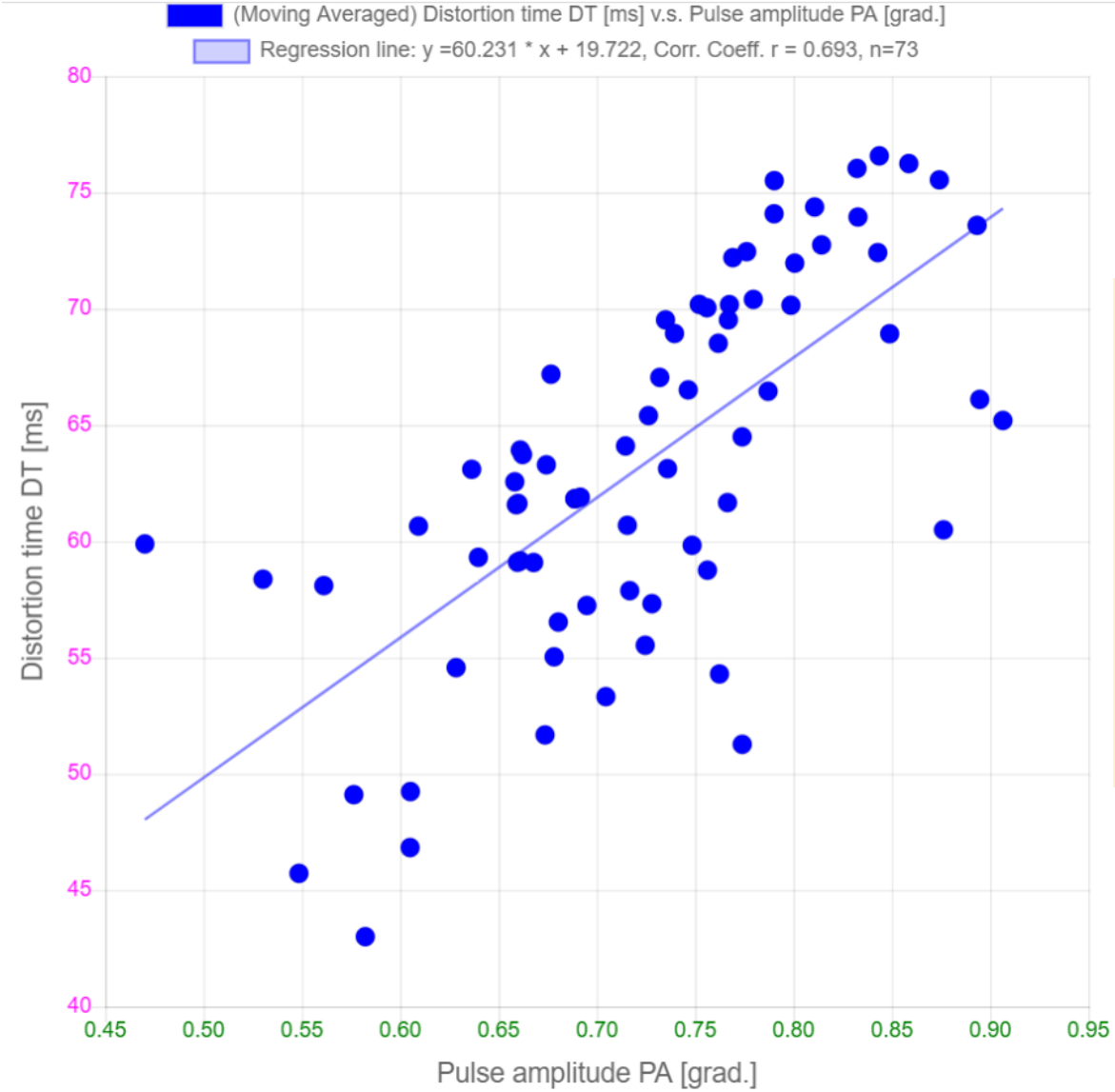
only the objective variable: strain time [moving average], its estimated value, and explanatory variable: pulse wave amplitude [moving average] are displayed.



Correlation diagram is displayed.

Vertical axis: Objective variable [moving average] (distortion time),

horizontal axis: explanatory variable [moving average] (pulse wave amplitude)



Taking the moving average, it can be seen that the distortion time, which is the blood pressure correlation value, has a slightly strong correlation with the pulse wave amplitude.

⇒ When blood pressure rises, pulse wave amplitude decreases.