

PlotID – Ein Framework zur Nachverfolgung von Abbildungen

Jan Lemmer, Martin Hock, Manuela Richter,
Prof. Peter Pelz
TU Darmstadt, TA Alex

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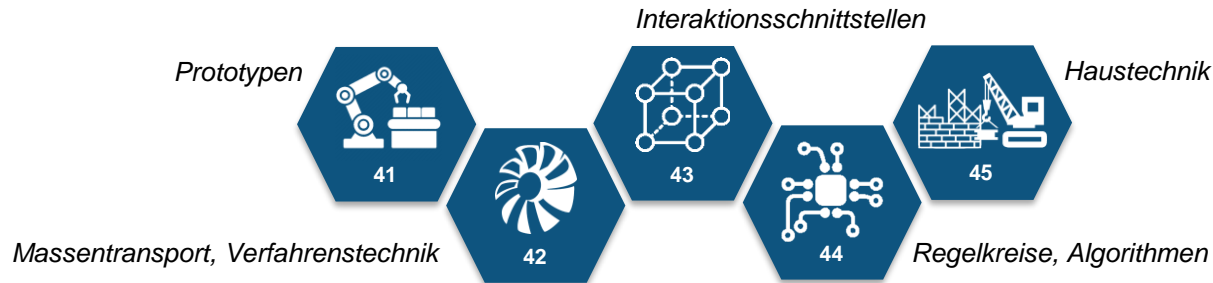
ALEX ...

... führt **maßgeschneiderte,
Einzigartige Experimente** ...

unter Nutzung von individuellen Software- oder
Hardware-Systeme durch.

Bedürfnisse sind

- Ermöglichen modularer, **selstdokumentierender
Software-Konfigurationen**.
- Erleichtern der **Wiederverwendung und Integration** of Teillösungen
- **Fein abgestimmter Zugang** zu Teilmengen großer Datensammlungen.



ALEX Patron
Peter Pelz

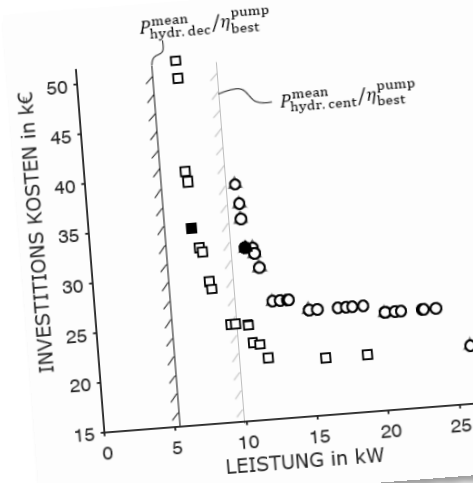
Hypothesen, Axiome „actio est reactio“



Gleichungen

$$\frac{d^2\varphi}{dt^2} + \frac{g}{l} \sin \varphi = 0.$$

Diagramme



- △ zentral-parallel
- zentral-serien-parallel
- dezentral

Test-Gebäude I:
 $H_{\text{geod}} = 100 \text{ m}$
 $Q_{\text{max}} = 72 \text{ m}^3/\text{h}$

Software



```
% define file path & name
fpath = "./testdata_2.h5";
dataset2 = 'testdata_2.h5';

% create hdf5 file and dataset > write
data to hdf5 file / dataset
h5create(fpath, "/x1", size(x1),
'Datatype', class(x1))
h5create(fpath, "/y1", size(y1),
'Datatype', class(y1))
write(fpath, "/x1", x1)
write(fpath, "/y1", y1)
```

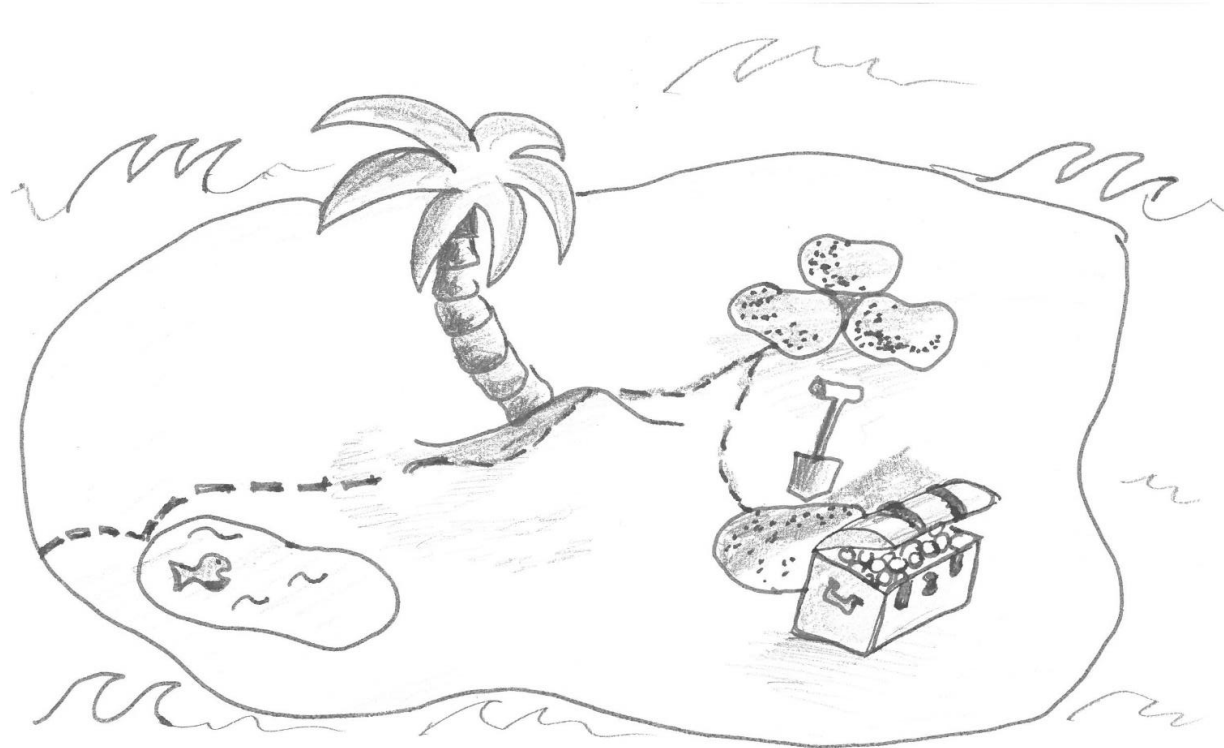
```
% Plotting
% This is still part of a normal script
to produce plots.
% Make sure to save each figure in a
variable to pass to PlotID-functions.
```

```
fig(1) = figure;
plot(x,y,'-k');
box off; hold on;
plot(x1,y1,'-r');
set(gca, 'TickDir', 'out', 'YLim',
[0,4]);
```

Text

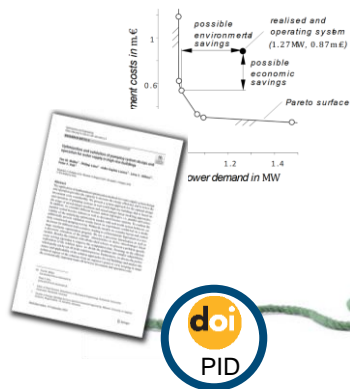
VI. CONCLUSION
 Based on fundamental fluid mechanics and by using a dimensional analysis it was clarified that most tidal channels are quasi-stationary. This is very important because it results in a reduction of complexity since time is only an implicit parameter. We have shown that the optimisation of a tidal array can be treated as a two-stage optimisation problem. For this optimisation, the correct objective and boundary conditions have to be chosen. Using the coefficient of performance introduced by Betz as

Schatzkarte

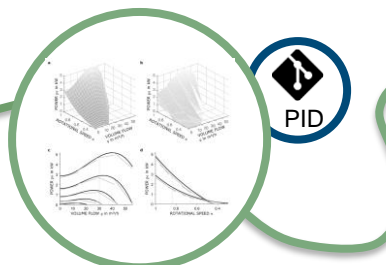




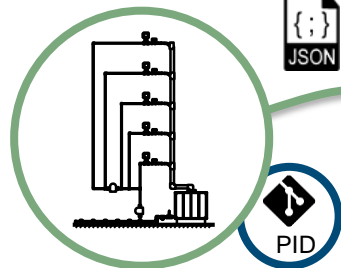
A treasure map for bespoke experiments ...



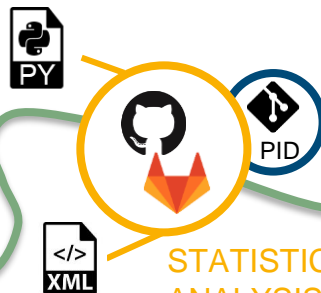
COMPONENT CHARACTERISTICS



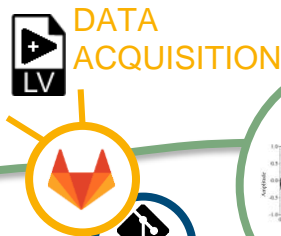
VALIDATED MODEL FOR CONTROL ALGORITHM



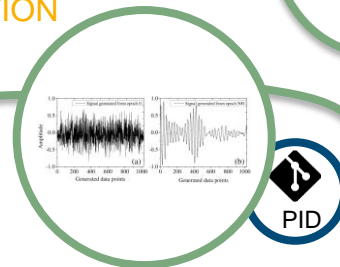
TEST RIG SETUP



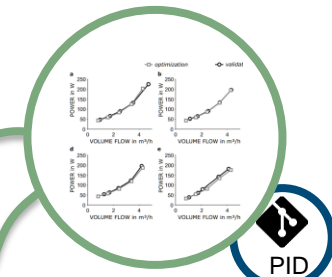
STATISTICAL ANALYSIS



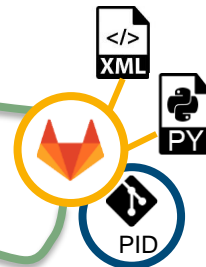
DATA ACQUISITION



RAW SIGNALS



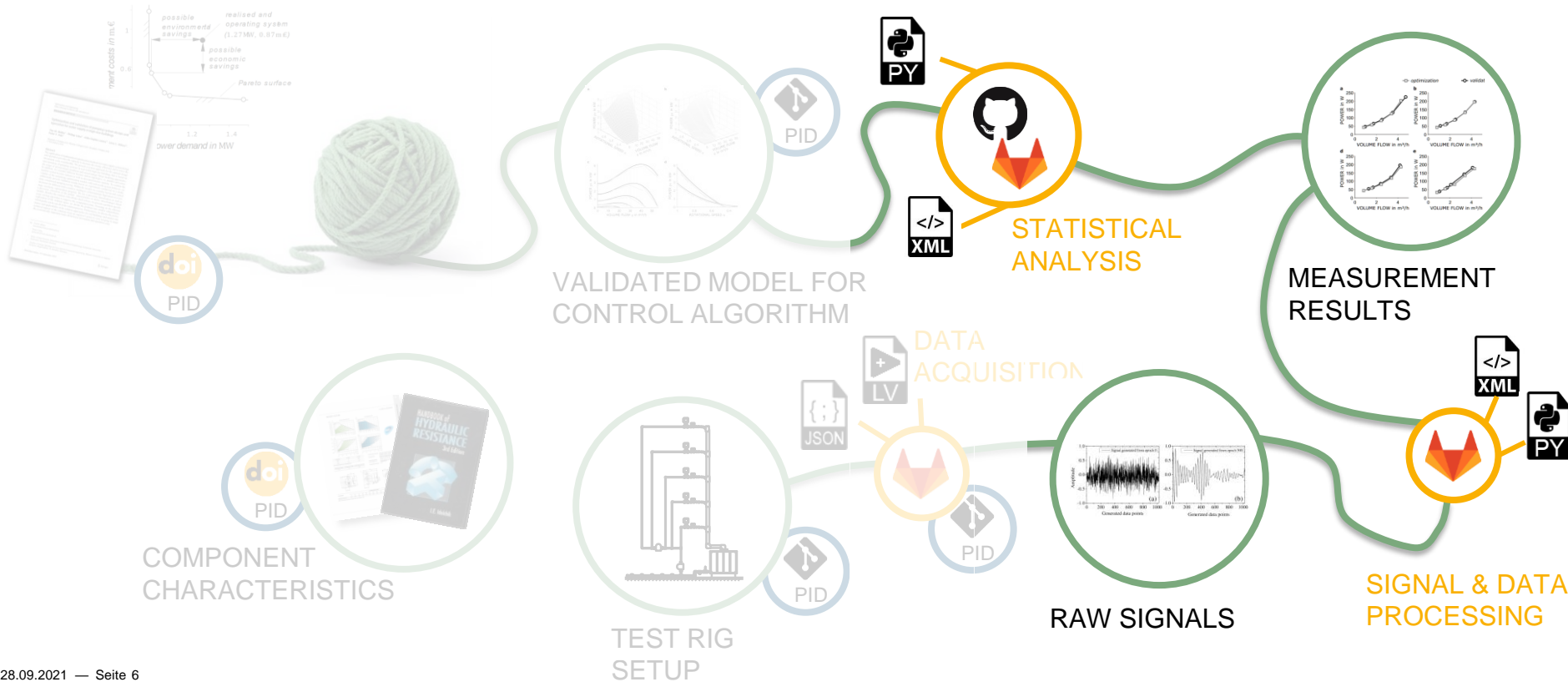
MEASUREMENT RESULTS



SIGNAL & DATA PROCESSING



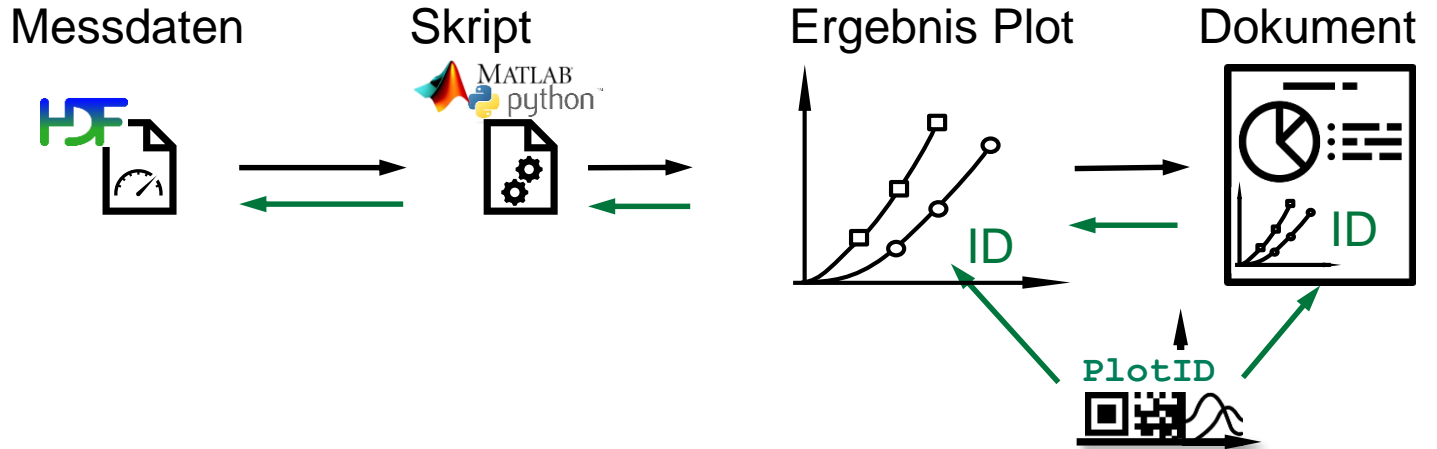
A treasure map for bespoke experiments ...



PlotID

Verknüpfung von Ergebnissen mit Daten und Programmcode

—● Einbindung “so einfach wie möglich” in den Forschungsprozess



Identifizier

ID

Identifizierung/Zuordnung eines Objektes
Artikelnummer, Inventarnummer, URL

UUID

eindeutige Identifizierung/Zuordnung eines
Objektes
filesystem identifier

PID

persistente Identifizierung/Zuordnung
eines Objektes
DOI, ORCID, ISBN,

Ziele von PlotID

- Zuordnung Daten – Skript – Plot/Abbildung mittels ID
- zentrale Ablage in „Paketen“
- einfache Integration in den Arbeitsablauf
- grundlegende Anpassbarkeit und Individualisierbarkeit
- plattformübergreifende & flexible Erweiterbarkeit

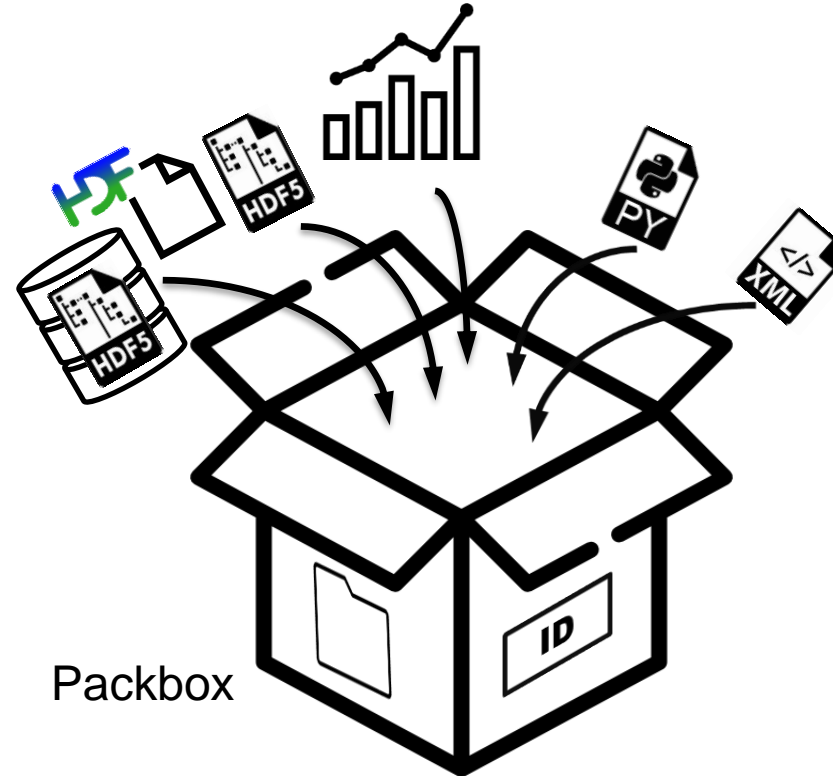
- PlotID ist kein
 - umfassendes Softwarepaket
 - Archiv/Repositoriums-Lösung



Zwei einfache Werkzeuge



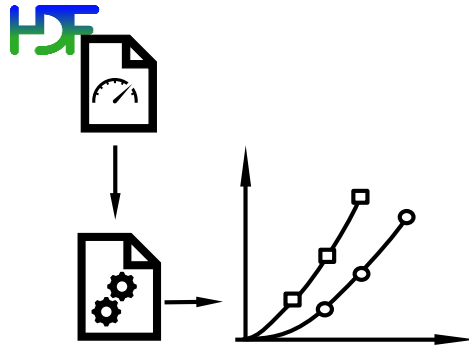
Stempel



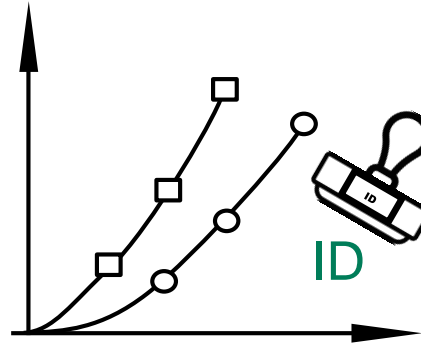
Packbox

Methodik

erstelle Plot
für ein Experiment

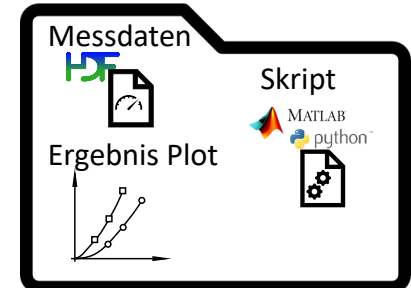


versehe Plot mit ID
Zuordnung



speichere Daten
Ablage der Daten

//ArchivXY/ID

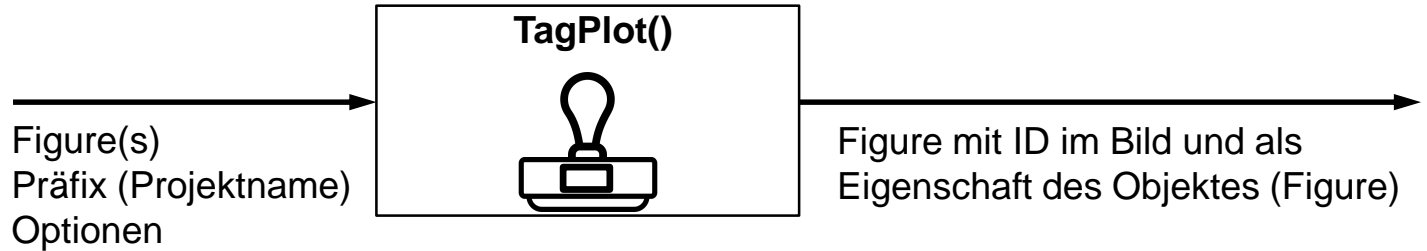


User Skript und Daten

PlotID.TagPlot()

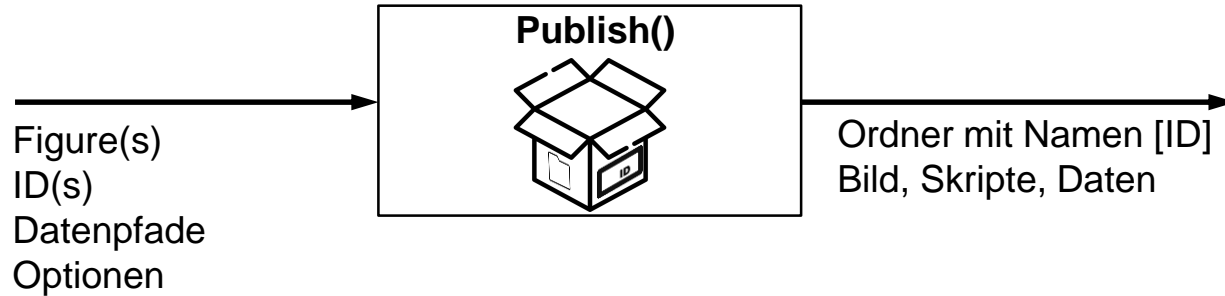
PlotID.Publish()

TagPlot()

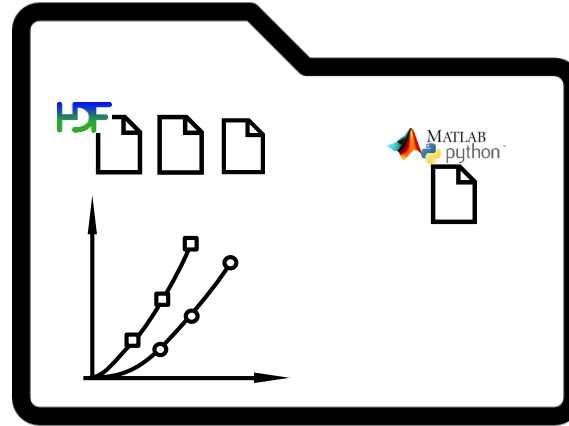


Publish()

'Publish' plot and associated research data.

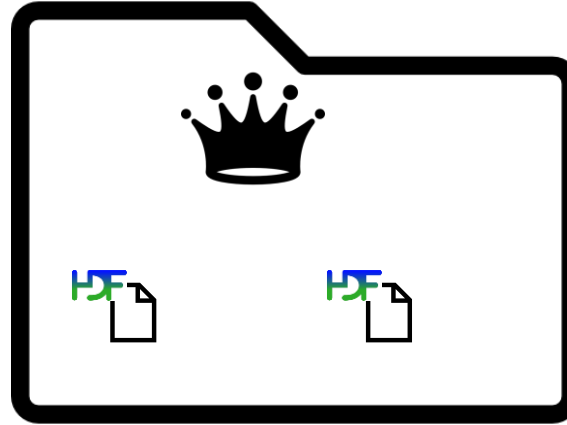


Varianten

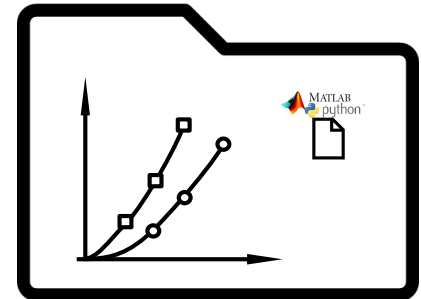
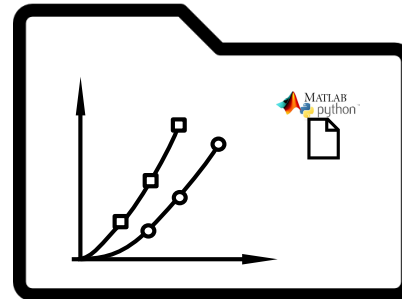
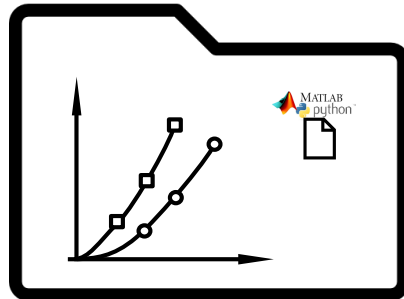


- alle Daten im Paket
- Daten nur in einem Paket
- Daten nicht im Paket
- Daten nur als Verweis

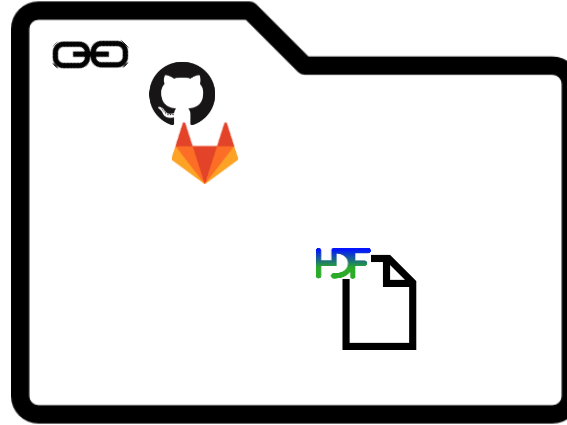
Varianten



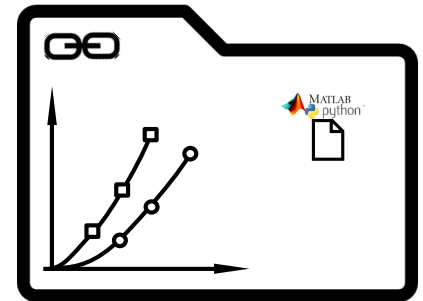
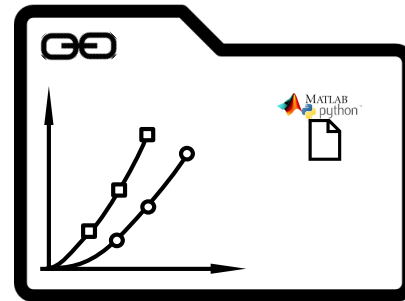
- alle Daten im Paket
- Daten nur in einem Paket
- Daten nicht im Paket
- Daten nur als Verweis



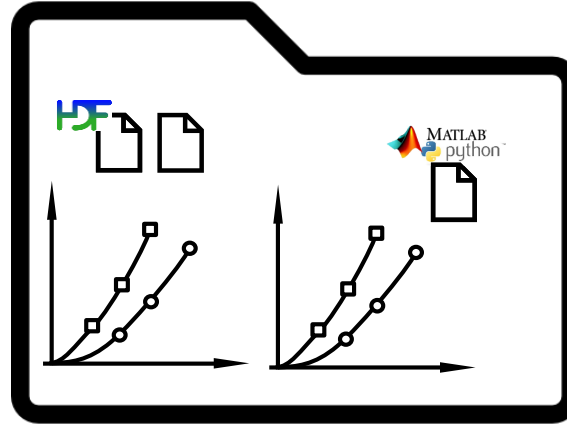
Varianten



- alle Daten im Paket
- Daten nur in einem Paket
- Daten nicht im Paket
- Daten nur als Verweis



Varianten



● mehrere Abbildungen in einem Paket

● alle Daten im Paket

● Daten nur in einem Paket

● Daten nicht im Paket

● Daten nur als Verweis

Use Case 1: Studentische Arbeiten

- ID: Lesbar, nicht zu kompliziert, kompatibel und kompakt

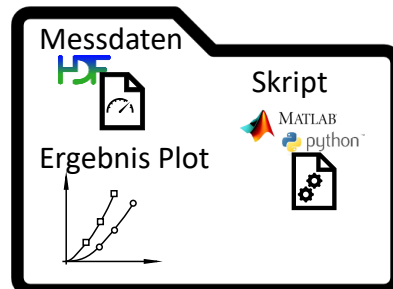
S215-61488DD0

Nummer der Arbeit

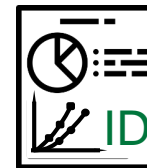
Datum und Uhrzeit (codiert)

- Archivierung: Ablage der Darstellungen aus Thesis/Präsentation auf zentralem Netzwerklaufwerk

//ArchivXY/S215-61488DD

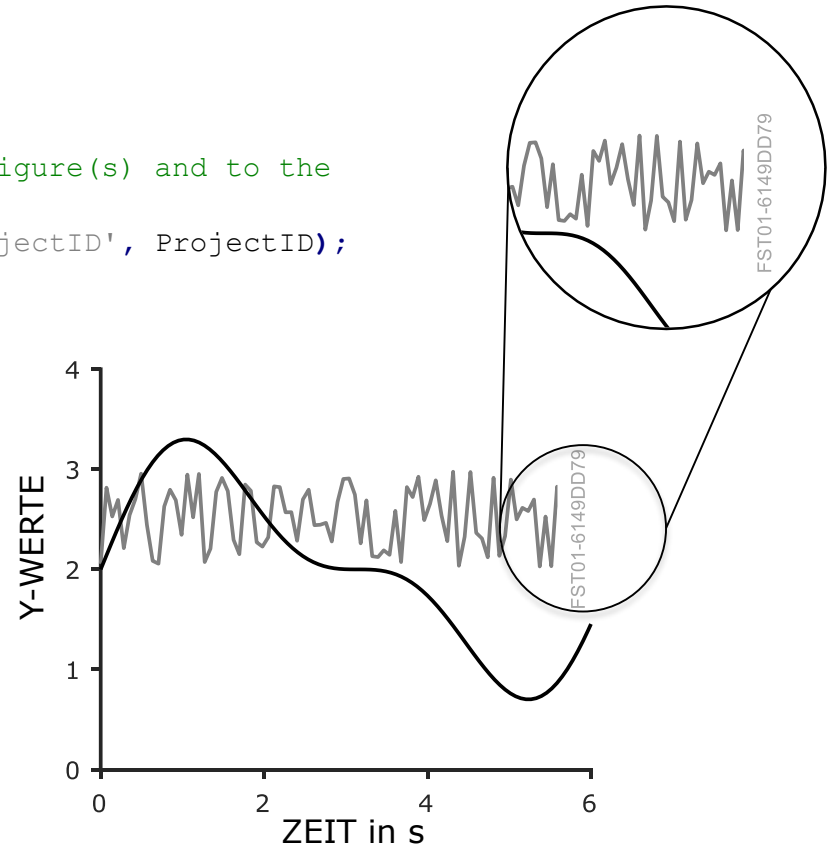
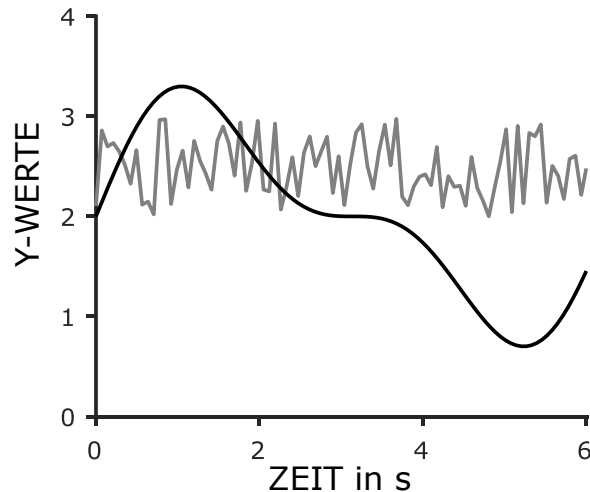


Dokument



Demo: tagPlot()

```
%% Tag the plot  
% PlotID Implementation starts here.  
% TagPlot adds a visible ID to the figure(s) and to the  
% figures property 'Tag'  
[fig, ID] = PlotID.TagPlot(fig, 'ProjectID', ProjectID);
```



Demo: publish()







```
%% Publishing
% Second part of plotID
% The functions needs the file location, the location of the data and the
% figure and can take several options.
path.script = mfilename('fullpath'); % filename of the m.script
% file names of the datasets
path.rdata = {'test_data.mat'; 'testdata_2.h5'}; % don't forget the extension

PlotID.Publish(path, ID, fig(1), 'Location', 'local', 'Method', 'individual')
```

> FST03-6151827C



🔍 "FST03-6151827C" durchsuchen

Name		Änderungsdatum	Typ	Größe
 FST03-6151827C_plot.png	plot	27.09.2021 08:36	PNG-Datei	67 KB
 FST03-6151827C_plot.fig		27.09.2021 08:36	MATLAB Figure	28 KB
 FST03-6151827C_script.m	script	27.09.2021 08:27	MATLAB Code	4 KB
 example_fcn.m		24.08.2021 09:56	MATLAB Code	1 KB
 config.json		23.09.2021 15:45	JSON-Quelldatei	1 KB
 testdata2.h5	data	27.09.2021 08:36	H5-Datei	3 KB

In development....

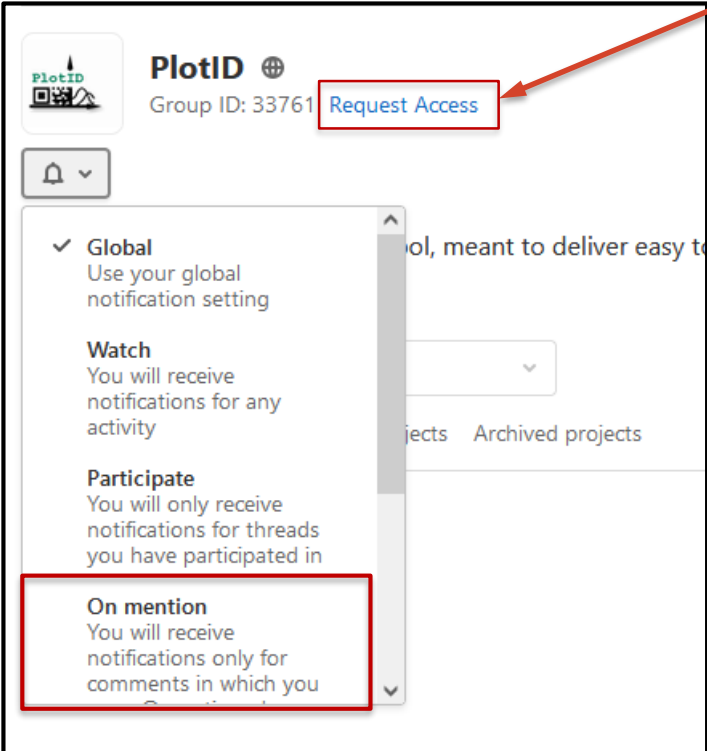
- Prerelease-Kandidat in MATLAB
- Gitlab Gruppe für Release



- Beteiligung und Feedback ausdrücklich erwünscht!
 - Feature Requests, Issues
 - Use-Cases
 - Port auf andere Sprachen
 - Schnittstellen für Repositorien & Dienste (figshare, DataCite, ...)

PlotID auf Gitlab

git.rwth-aachen.de/plotID



The screenshot shows the GitLab group page for PlotID. The group name is "PlotID" with a globe icon and "Group ID: 33761". A red box highlights the "Request Access" button, with a red arrow labeled "1" pointing to it. Below the group name is a notification bell icon with a dropdown arrow, with a red arrow labeled "2" pointing to it. A dropdown menu is open, showing notification settings. The "On mention" option is highlighted with a red box, and a red arrow labeled "3" points to it. The menu options are: "Global" (checked), "Watch", "Participate", and "On mention".

1

2

3

Fragen & Diskussion