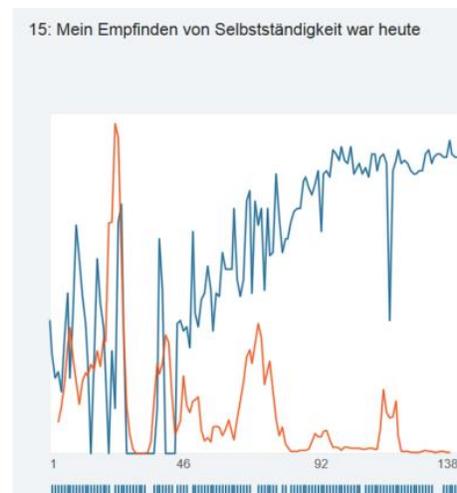


# #display\_time-series\_diagrams



## *For your information:*

*As soon as clients have answered process questionnaires (at least two administrations), SNS allows you to use one of its core features, the representation of the data in time-series diagrams. These capture the progress and process of single items and can as such be used for feedback talks, creation of new therapeutic hypotheses and make small accumulating changes over time understandable. Also, daily administration of questionnaires and time-series diagrams form the basis for most types of analysis in SNS, such as recurrence plots, correlation matrices and resonance diagrams.*

*In order to increase usability of SNS in everyday practice, you will find a quick way, which takes you from the client-overview page (your starting page as a therapist) in just 1 click to the display of a client's data.*

*However, it is often beneficial to fine-tune the settings of diagrams to your and your client's individual needs. Therefore SNS allows you in the menu-bar "Diagrams" to individually choose all types of diagrams in a detailed version. You can setup a personalized tab under which you can combine a synopsis of a client's data; this tab stays saved and will be accessible upon your next login with all detailed settings and updated with the latest responses of your client.*

*For more information on types of analysis, please consult the presentations [#display\\_outcome\\_diagrams](#), [#display\\_resonance\\_diagrams](#), [#display\\_recurrence-plots](#) and [#display\\_correlation\\_matrices](#).*

Short overview: **2**

*The first part of the presentation will guide you through the quick (and not so dirty) way of accessing and displaying a client's time-series diagrams:*

- 1.1. Navigate to "Overview" in the menu
- 1.2. Use the drop down bar to chose a client you want to add to your personal overview page
- 1.3. click "ADD CLIENT"
- 1.4. Click on the name of the process questionnaire
- 1.5. SNS automatically jumps to the menu-bar "Diagrams"
- 1.6. SNS automatically creates a personalized tab for the default diagram-configuration
- 1.7. all factors and items are displayed in separate time-series diagrams



*The second part of the presentation will now guide you through the detailed way of accessing and displaying a client's time-series diagrams:*

- 2.1. Navigate to "Diagrams" in the menu-bar
- 2.2. Click on "+" to add a new tab
- 2.3. Add a (personalized) name to the new tab
- 2.4. Save the tab of the "NEW DIAGRAM-CONFIGURATION"
- 2.5. click on "ADD GRAFIC"
- 2.6. Chose the type of diagram you want to display (here time-series)
- 2.7. choose the desired client(s)
- 2.8. check box to display "raw data" of the items
- 2.9. check box to display also the "commentary" in the diagrams
- 2.10. check box to display the Dynamic Complexity of each item
- 2.11. superposition of raw items and Dynamic Complexity?
- 2.12. choose "questionnaire" from drop-down
- 2.13. check box to mark "all items"
- 2.14. check box to mark "all factors"
- 2.15. after you made your specific choice, click on "CREATE DIAGRAMS"



From page 15 *Tips & Tricks*



*The first part of the presentation will guide you through the quick (and not so dirty) way of accessing and displaying a client's time-series diagrams:*



1.1. Overview

Overview

1.2.

1.3.

ADD CLIENT

**1.1.**  
Navigate to  
“Overview”  
in the menu

(for users that are created  
as ‘therapists’ this  
overview page is the  
default starting page)

**1.2.** Use the drop down bar to  
chose a client you want to add to  
your personal overview page

**1.3.** click “ADD CLIENT”

kr131m

DEACTIVATE

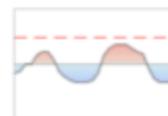
REMOVE

QUESTIONNAIRE	SINCE	COMPLIANCE	VERPASST	OUTCOME
DASS - 21	07.03.2014	100%	0	
Pers FB AM	08.01.2014	100%	0	
ISR	27.05.2014	100%	0	
Y-BOCS	27.05.2014	100%	0	
TPB - TK	27.05.2014	100%	0	

TRAFFIC LIGHTS

HISTORY

CURRENT

TPB\_TK\_Emo-  
tionsfluktuationTPB\_TK\_Thera-  
piebeziehung

*You will receive the overview of the chosen client (here kr131m):*

**Administered traffic lights:**

- name
- history/progress
- current value

**Information about the schedules of that client:**

- Name of questionnaire
- Starting date
- **absolute compliance** (number of answered questionnaires/number of triggered questionnaires)
- **Number of currently missed questions** (of the last 7 triggered questionnaires)
- **Outcome** (factor-values)
  - outcome-questionnaires: first and latest answer (e.g. DASS-21)
  - process questionnaires: per respective factor the mean of the first 7 days and the latest 7 days (e.g. TPB-TK)

kr131m

DEACTIVATE

REMOVE

QUESTIONNAIRE	SINCE	COMPLIANCE	VERPASST	OUTCOME
---------------	-------	------------	----------	---------

DASS - 21	07.03.2014	100%	0	
-----------	------------	------	---	--

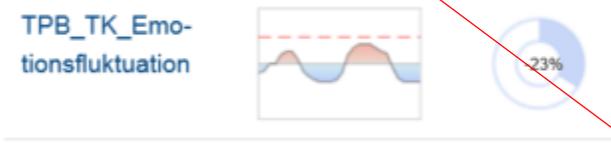
Pers FB AM	08.01.2014	100%	0	
------------	------------	------	---	--

ISR	27.05.2014	100%	0	
-----	------------	------	---	--

Y-BOCS	27.05.2014	100%	0	
--------	------------	------	---	--

1.4. TPB - TK	27.05.2014	100%	0	
---------------	------------	------	---	--

TRAFFIC LIGHTS HISTORY CURRENT



“REMOVE” takes the client away from your overview (not the complete system)

“DEACTIVATE” pauses all schedules of the client

Outcome-questionnaire: a click on the name opens the complete diagram of all data gathered using this questionnaire in form of histograms.  
→ See #display\_outcome\_diagram

1.4. Click on the name of the process questionnaire will open the default view of all factors and items of that questionnaire as time-series (of that client)

**1.5. SNS automatically jumps to the menu-bar "Diagrams"**

**1.6. SNS automatically creates a personalized tab for the default diagram-configuration (with the tab-name: [client-name]-[questionnaire-name])**

**1.7. all factors and items are displayed in separate time-series diagrams**

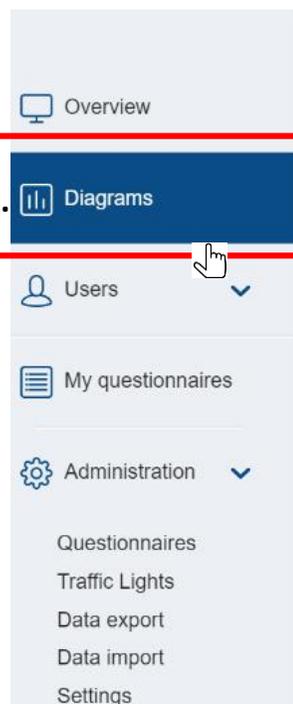
- Overview
- Diagrams**
- Users
- My questionnaires
- Administration
- Questionnaires
- Traffic Lights
- Data export
- Data import
- Settings

## Diagramme

KR131M-TPB - TK



*The second part of the presentation will now guide you through the detailed way of accessing and displaying a client's time-series diagrams:*



**2.1. Navigate to “Diagrams” in the menu-bar**

Diagrams



**2.2. You need to click on “+” to add a new tab for your new, detailed diagram-configuration**

Diagram configuration

Action:  New diagram configuration  
 Reopen diagram configuration

Name:

CREATE DIAGRAM CONFIGURATION

CANCEL

- Overview
- Diagrams**
- Users
- My questionnaires
- Administration
- Questionnaires
- Traffic Lights
- Data export
- Data import
- Settings

# Diagrams



## Diagram configuration

- Action:
- New diagram configuration
  - Reopen diagram configuration

Name: 2.3. MM0815XX -TPQ

2.4. **CREATE DIAGRAM CONFIGURATION** CANCEL

**2.3. Add a (personalized) name to the new tab**

**2.4. Save the tab of the "NEW DIAGRAM-CONFIGURATION"**

- Overview
- Diagrams**
- Users
- My questionnaires
- Administration
  - Questionnaires
  - Traffic Lights
  - Data export
  - Data import
  - Settings

## Diagrams



MM0815XX -TPQ



2.5. **ADD GRAPHIC**

**2.5. click on "ADD GRAFIC"**

*The diagram-assistant opens*

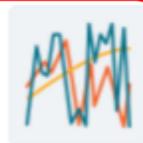
## Diagrams

MM0815XX -TPQ

Chart Wizard

1 Chart Type

2.6.



Time series



Outcome



Resonance  
Diagrams



Recurrence  
Plots



Correlation  
Patterns

2 Client

3 Parameters

4 Items

BUTTON.CREATE

CANCEL

**2.6. Chose the type of diagram you want to display (here time-series)**

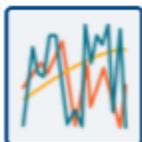
# Diagrams

MM0815XX -TPQ



## Chart Wizard

### 1 Chart Type



Time series



Outcome



Resonance  
Diagrams



Recurrence  
Plots



Correlation  
Patterns

**2.7. choose the desired client(s)**

### 2 Client

2.7.

× MM0815XX |

MM0815XX -TPQ



### Chart Wizard

#### 1 Chart Type



Time series



Outcome



Resonance  
Diagrams



Recurrence  
Plots



Correlation  
Patterns

#### 2 Client

MM0815XX

#### 2.8. 3 Parameters

Raw Data

Show comments 2.9.

#### 2.10.

Dynamic Complexity

Time Frame

7

Dynamic Confidence Interval 1%

Dynamic Interval Timeframe

21

Dynamic Confidence Interval 5%

2.8. check box to display "raw data" of the items

2.9. check box to display also the "commentar" in the diagrams

2.10. check box to display the Dynamic Complexity of each item (if yes → define "window-width" and choose confidence intervals)  
(see for details on the algorithm the presentation #dynamic\_complexity)

Permutation Entropy

Time Frame

7

Order

2

!!! The permutation-entropy has not yet been validated empirically within SNS. To prevent misinterpretation, please wait our further notice on the use of permutation-entropy!!!

#### 2.11.

Combine different "line types" in one chart

Create separate charts for every line type

2.11. If you have chosen more than one type, you can choose to display raw data and dynamic complexity combined for each respective item or in separate diagrams.

4

Items

Questionnaire

2.12. TPB

2.12. choose "questionnaire" from drop-down

Select all factors 2.14.

Select all items 2.13.

2.13. check box to mark "all items"

I - Therapeutische Fortschritte / Zuversicht / Selbstwirksamkeit

1 - Es wird mir immer besser möglich, meine Probleme aus eigener Kraft zu lösen

2 - Ich fühle mich jetzt Situationen gewachsen, denen ich mich bisher nicht gewachsen fühlte

3 - Ich verstehe mich und meine Probleme jetzt besser

4 - Heute bin ich der Lösung meiner Probleme näher gekommen

5 - Heute war ich zuversichtlich, dass ich meine Probleme lösen werde

6 - In Bezug auf meine persönlichen Ziele erlebte ich mich heute als

II - Klima / Atmosphäre in der Klinik

2.14. check box to mark "all factors"

Mark or unmark single items or factors for being displayed

- Overview
- Diagrams**
- Users
- My questionnaires
- Administration
  - Questionnaires
  - Traffic Lights
  - Data export
  - Data import
  - Settings

- 12 - Heute sind mir Zusammenhänge klar geworden, die ich bisher nicht gesehen habe
- 13 - Heute haben sich für mich neue Perspektiven ergeben
- 14 - Heute waren die Inhalte, mit denen ich mich beschäftigt habe, neu und ungewöhnlich
- VI - Intensität der Problembearbeitung
- 7 - Heute habe ich an dem gearbeitet, was mich wirklich bewegt
- 8 - Heute war ich motiviert, an meinen Problemen bzw. an deren Lösung zu arbeiten
- 9 - Heute habe ich mich an belastende Aspekte meines Lebens herangetraut
- 10 - Nach den heutigen Erfahrungen bin ich fest entschlossen, meine Probleme anzupacken
- 11 - Mein Interesse / meine Neugierde an den Themen und Inhalten der Therapie war heute
- VII - Beschwerden und Problembelastung
- 37 - Meine Beschwerden waren heute
- 38 - Meine Probleme beschäftigten mich heute
- 39 - Meine Beschwerden beeinträchtigten heute mein Alltagsleben
- 40 - Heute habe ich mich meinen Problemen hilflos ausgeliefert gefühlt
- 41 - Situationen, die mit meinen Problemen zu tun haben, habe ich heute vermieden
- 42 - Heute war ich in der Lage, mich meinen Problemen zu stellen

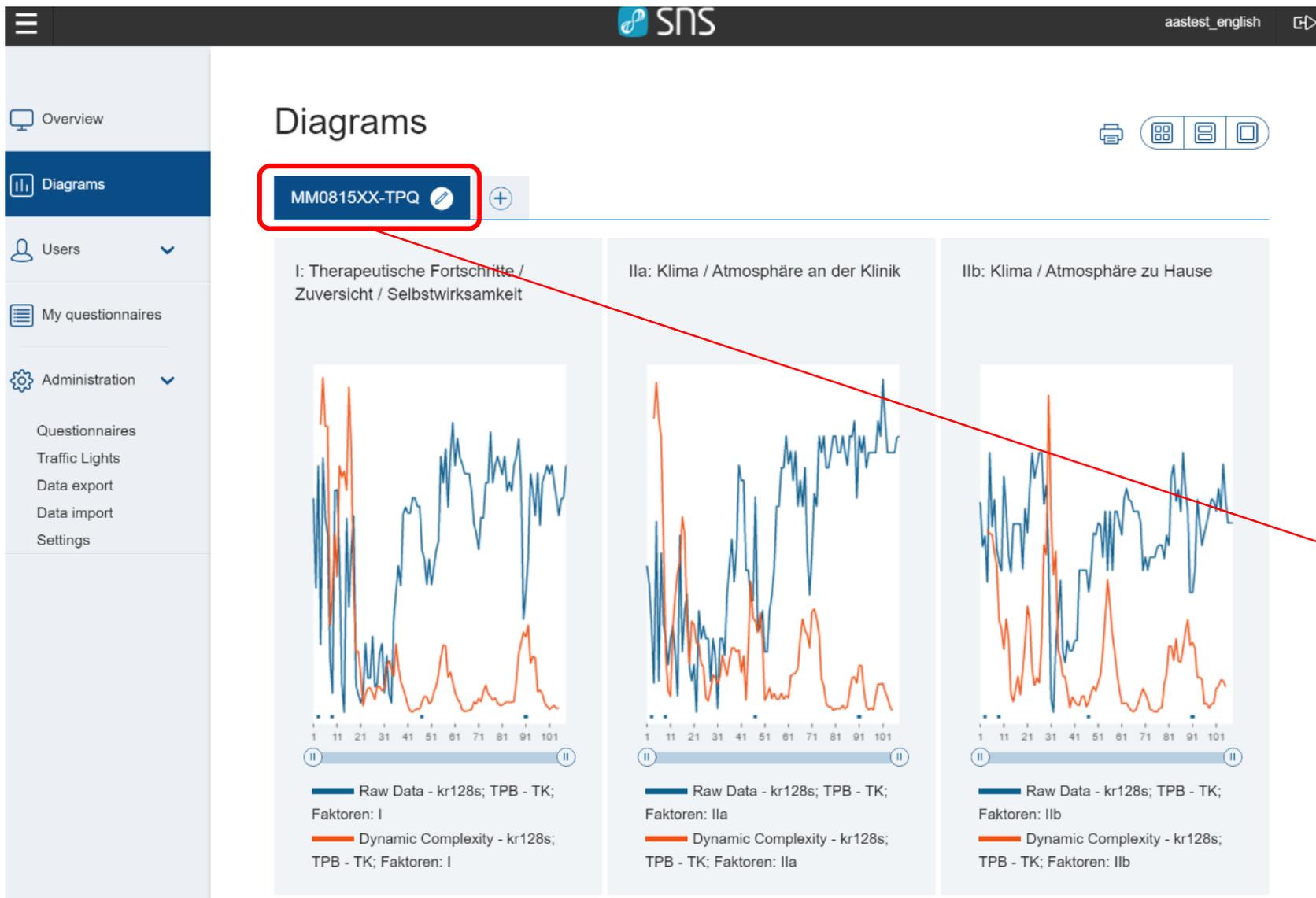
different diagrams     averaging of the time series

2.15.

48 DIAGRAMME ERSTELLEN

CANCEL

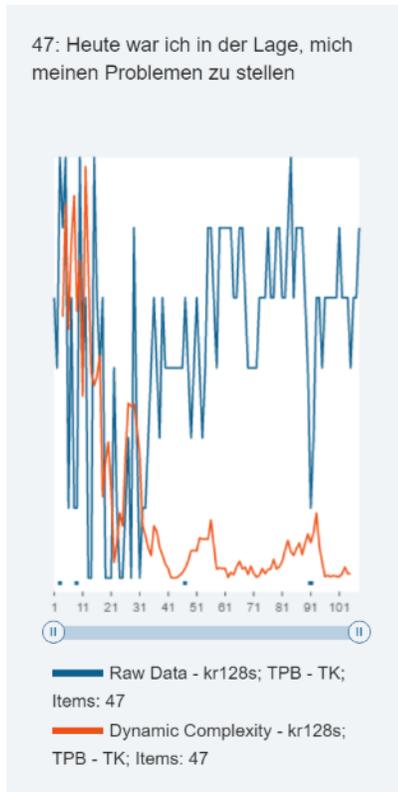
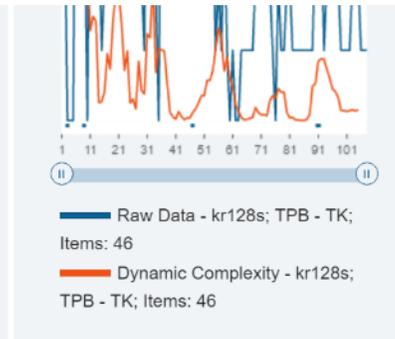
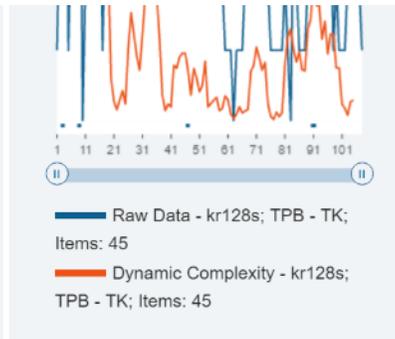
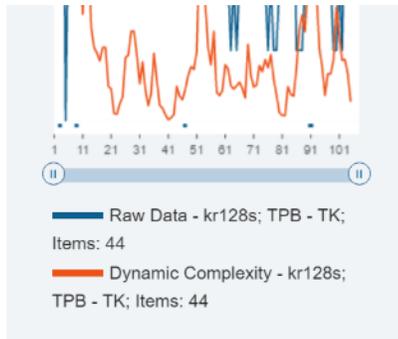
**2.15. after you made your specific choice, click on “CREATE DIAGRAMS” for the display of all marked items/factors (you need to scroll to the bottom of the page to find that button)**



*You see the display of:  
blue → raw items  
orange → dynamic complexity*

**This new diagram-configuration will remain available as TAB at your next login to SNS. When re-accessing the TAB, SNS will update the time-series with all new data that has been generated from that client.**

- Overview
- Diagrams**
- Users
- My questionnaires
- Administration
  - Questionnaires
  - Traffic Lights
  - Data export
  - Data import
  - Settings



**Scroll down to the end of page will give you access to the button “ADD GRAFIC”. This will open the diagram-assistant again and you can choose to add more diagrams or other analyses to the diagram-configuration at your will. Thereby you can create a synoptic overview of each particular client, in line with your therapy-plan and therapeutic hypotheses**

**ADD GRAFIC**

Click pen to “Edit”  
tab-title

“+” adds a new TAB for new  
diagram-configurations  
(of e.g. new clients)

Click on “Print” to print all diagrams of the  
diagram-configuration  
(!!!NOTE that you will have to scroll down first  
to trigger the loading of the diagrams)



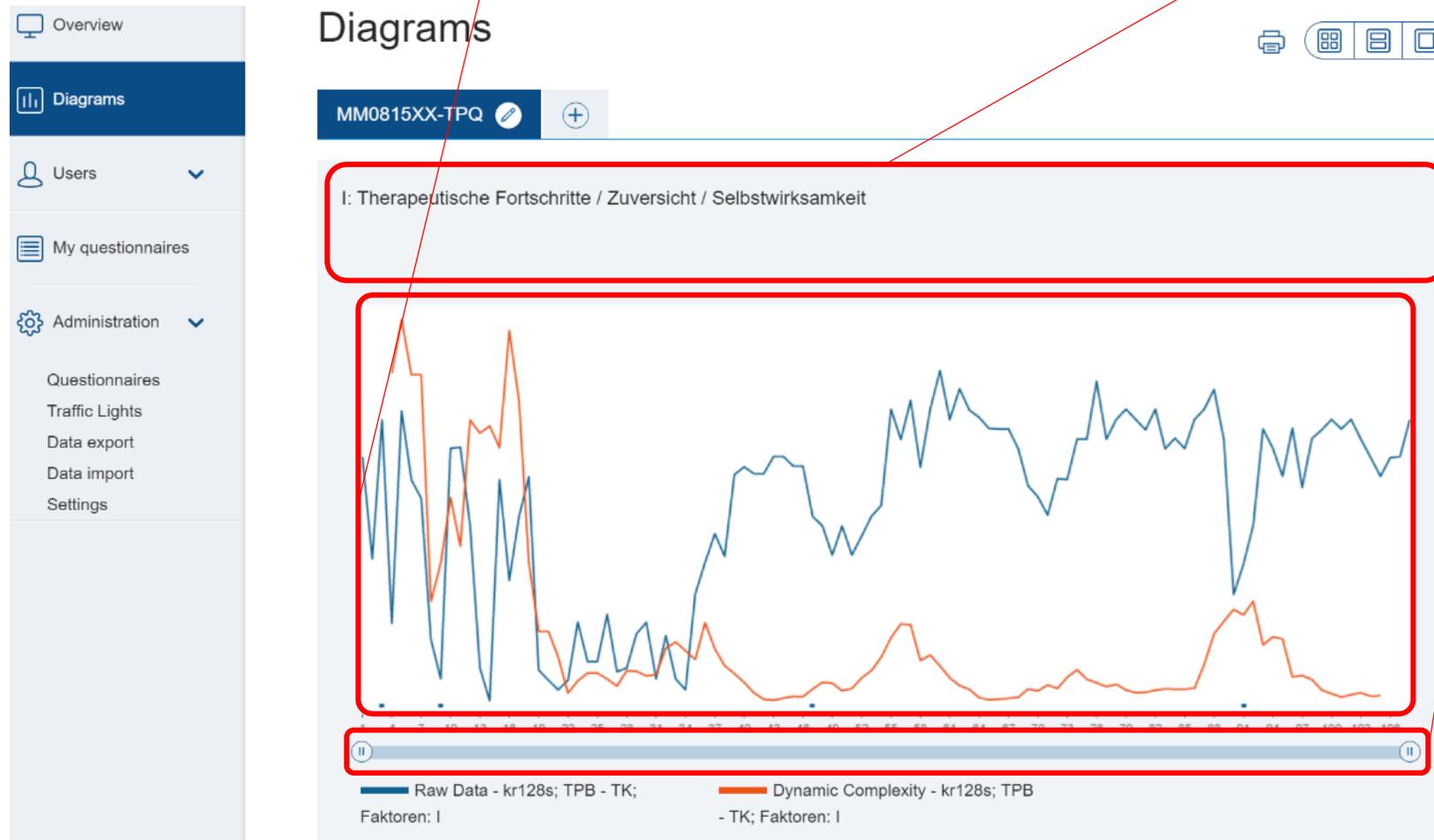
Choose size  
of diagrams:  
small/middle  
/big

(PS: You can also  
choose to use the  
zoom-function of the  
browser. However  
do so only with care,  
because it triggers  
the reload of all  
diagrams)

## *Time-series diagrams are 'active':*

**The diagram field is clickable**

**The frame is clickable**

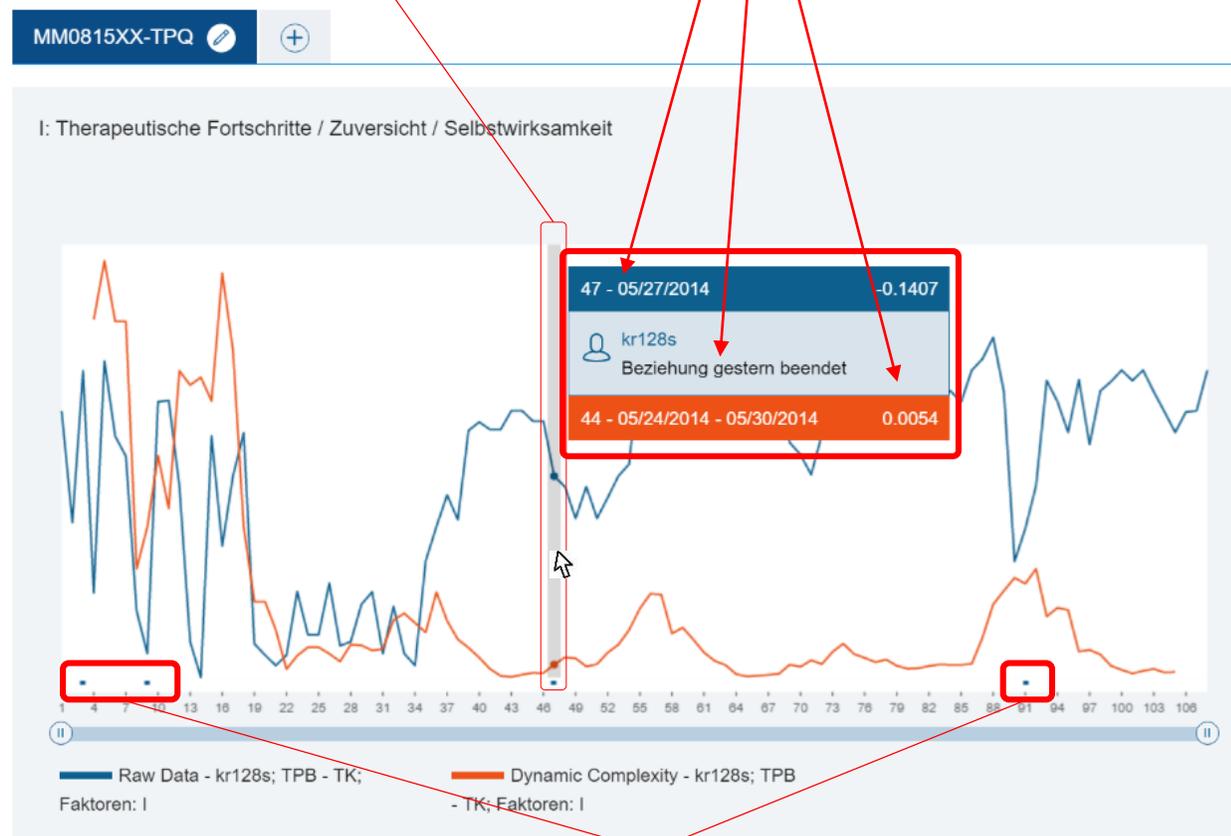


**The bar below the diagram allows you to zoom in and out and focus on periods of the time-series**

Click on a day will clamp that day and its commentary (until clicked again)

With simple 'Mouse-Over' you can see a tooltip with information on:  
Fill-in date (number, date and a value)(blue)  
commentary of the client(s) (grey)  
If dynamic complexity: applicable time-window and value (orange)

### Diagrams



The marks underneath the diagram indicate dates with commentary

**Click into the frame opens a screen with background information the diagram and additional options.**  
**Keep mouse-button pressed renders the whole diagram moveable (drag&drop)**

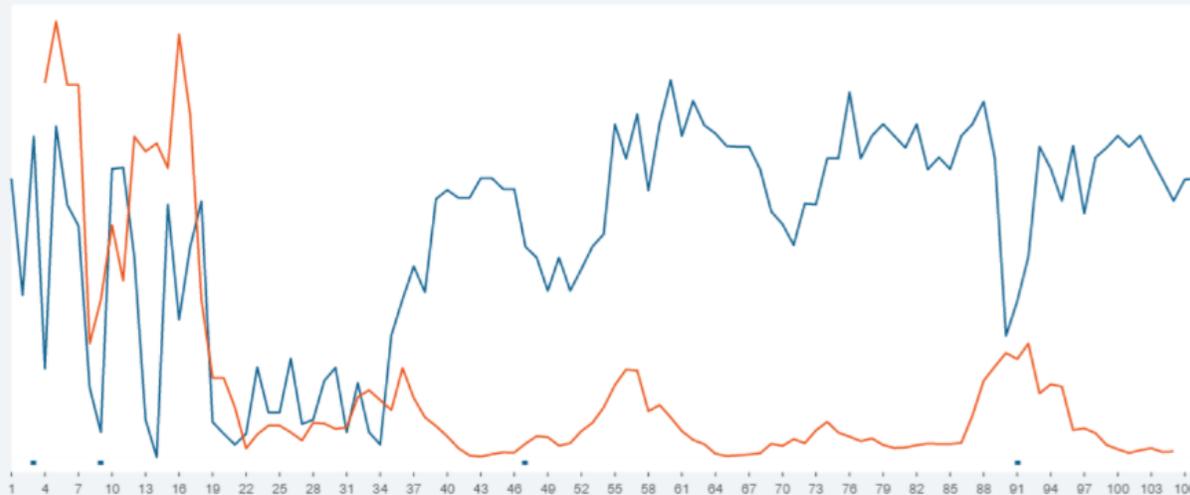
## Diagrams



MM0815XX-TPQ



I: Therapeutische Fortschritte / Zuversicht / Selbstwirksamkeit



Raw Data - kr128s; TPB - TK;

Faktoren: I

Dynamic Complexity - kr128s; TPB

- TK; Faktoren: I



# Diagrams

When in background: TAB "GENERAL" defines:

- Settings (align multiple time-series by date or number; commentary)
- Layout of that single diagram
- Export options
- Delete diagram

MM0815XX-TPQ

I: Therapeutische Fortschritte / Zuversicht / Selbstwirksamkeit

**GENERAL** KR128S KR128S

**Settings**

- Align time series by measurement
- point t = 1
- Align time series by objective time
- Show comments

**Layout view**

**Export options**

- Excel
- Diary entries
- High-res diagram
- Print

**REMOVE THIS CHART**

# Diagrams

When in background: TAB “[client-name]” defines:

- Client name
- Questionnaire type (process or outcome)
- Data-Parameter (raw values, dynamic complexity)
- Questionnaire name
- Item/factor name

MM0815XX-TPQ

I: Therapeutische Fortschritte / Zuversicht / Selbstwirksamkeit

GENERAL **KR128S** KR128S

Client(s):	kr128s
Method:	Prozess
Graphic:	Zeitreihen (Raw Data)
Questionnaire:	TPB - TK
Factor:	I

With “+” you can enter the diagram-assistant from within the diagram. You can add to the current diagram more time-series of e.g. another client (team coaching, couple therapy) or the same client (e.g. to superposition two items that are related; e.g. a factor “stress” with an item “sport today?”)

## Diagrams

MM0815XX-TPQ  

I: Therapeutische Fortschritte / Zuversicht / Selbstwirksamkeit

GENERAL KR128S KR128S 

### Add new time series

- 1 Clients
  -
- 2 Parameters
  - Raw Data
  - Dynamic Complexity
    - Dynamic Confidence Interval 1%
    - Dynamic Confidence Interval 5%
  - Permutation Entropy

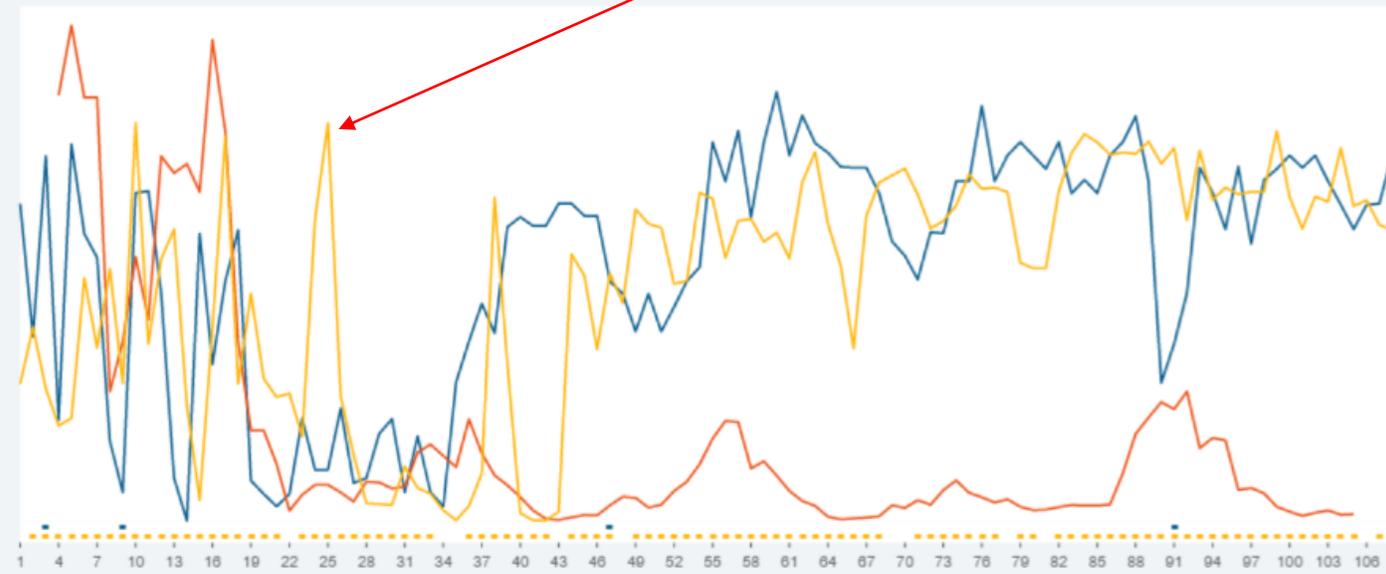
## Diagrams

The new times-series will be added in a new color.  
You have to choose whether you want the time-series to be aligned by date or number of trigger

MM0815XX-TPQ



I: Therapeutische Fortschritte / Zuversicht / Selbstwirksamkeit



Raw Data - kr128s; TPB - TK;  
Faktoren: I

Dynamic Complexity - kr128s; TPB  
- TK; Faktoren: I

Raw Data - ba88i; PersFB KI;  
Faktoren: II



## Some general remarks on time-series diagrams

1. **The high frequent scheduling of questionnaires and resulting time-series is a core ingredient of SNS. It allows for individual monitoring at the pulse of your client, recognizing patterns of all kind of frequencies and rhythms, and forms the basis for analyses derived from complex systems theory (see #create\_resonance\_diagrams, #create\_recurrence-plots and #create\_correlation-matrices).**
2. **The better your theoretical understanding of complex systems, the more you will benefit of the tools in SNS. Please feel free to contact us for more background literature, courses and tips on the topic.**
3. **The overview page in SNS gives you a concise and quick overview over all your current clients.**
4. **All diagram configurations stay saved in their respective tab. Use this function to prepare individually tailored feedback talks, focus on specific aspects of the client, work dynamically throughout the course of a complete therapy or consult and naturally connect sessions with each other.**
5. **SNS works generically and integrates continuously all new data to diagrams.**
6. **Wait for diagrams and other commands to load until you give a new command. That helps to decrease loading times and work smoothly.**
7. **Use SNS as a tool to generate hypothesis you want to test in the dialog with the client. It is by no means replacing any therapeutically relevant aspect of the client-therapist relationship! SNS is a tool that adds some extra information to a therapeutic process and can help to remember states from weeks and month ago.**

## Feedback

**If you come across problems when creating a time-series diagrams or if the presentation has flaws, misses information or you have suggestions, please do not hesitate to contact us.**

**SNS is a work in progress and we, you and all clients benefit from all feedback we receive. Feel free to always contact the support under:**

**[benjamin.aas@ccsys.de](mailto:benjamin.aas@ccsys.de)**

**Thank you very much!**