

Joda

Anleitung DTC

Programm zur Ladungsmessung mit
Resonanten Transformatoren

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Programmstart

Auf ASL-Maschine: Befehl "dtc" eingeben

DTC GUI

DTC - Resonant Trafo Control

Connect Disconnect

Vacc: 0 1 2 3 4 5 6 7 8 9 10 11 12 13

Seq-Ind: ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○

Active: ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○

2) Verbindung herstellen

1) Trafo auswählen Name wird in Eingabefeld übertragen

Charge [C]

time [ticks]

Transmis:

time [ticks]

Device Status

| | | | |
|--------|---|-----------|---|
| Power | ● | Interlock | ● |
| Remote | ● | SW-Error | ● |
| NN | ● | HW-Error | ● |

Data Status 1

| | | | |
|-----------|---|------------|---|
| Overload | ● | Over-Rng | ● |
| Under-Rng | ● | Compos-Err | ● |

Data Status 2

| | | | |
|-----------|---|------------|---|
| Overload | ● | Over-Rng | ● |
| Under-Rng | ● | Compos-Err | ● |

Charge [C] 1 | **Charge [C] 2**

... | ...

Info

Cyclestamp ...

Mode

Gain Mode ▼ ..

Gain Range ▼ ..

Logger Transmission Particles OP-Mode

Siehe auf SD-Wiki:

[https://www-bd.gsi.de/dokuwiki/doku.php?id=ds:software:deviceaccess&s\[\]=joda](https://www-bd.gsi.de/dokuwiki/doku.php?id=ds:software:deviceaccess&s[]=joda)

Programmstart

Anzeige:
Ausgewählter
Beschleuniger

Keine Panik!
HW-Fehler
ignorieren

The screenshot shows the DTC GUI interface. At the top, there's a title bar 'DTC GUI' and a window title 'DTC - Resonant ... fo Control'. Below the title bar, there are 'Connect' and 'Disconnect' buttons. A list of devices is shown on the left, with 'GHHPDT1C' selected. The main area displays 'Vacc' (0-13) and 'Seq-Ind' (0-13) buttons. A large '1' is displayed next to the 'Seq-Ind' buttons. Below this, there are two graphs: 'Charge [C]' and 'Transmission [%]'. The 'Charge [C]' graph shows a value of 1.59e-11. The 'Transmission [%]' graph shows a value of 0.00e+00. On the right, there's a 'Device Status' section with a table of status indicators. A yellow box highlights the 'HW-Error' indicator, which is red. Below this, there are 'Data Status 1' and 'Data Status 2' sections, each with a table of status indicators. At the bottom, there's a status bar with 'Logger', 'Transmission', 'Particles', and 'OP-Mode' buttons. A yellow box highlights the 'acqstamp: 2019-12-02 19:28:20' text.

| Device Status | | | |
|---------------|---|-----------|---|
| Power | ● | Interlock | ● |
| Remote | ● | SW-Error | ● |
| NN | ● | HW-Error | ● |

| Data Status 1 | | | |
|---------------|---|------------|---|
| Overload | ● | Over-Rng | ● |
| Under-Rng | ● | Compos-Err | ● |

| Data Status 2 | | | |
|---------------|---|------------|---|
| Overload | ● | Over-Rng | ● |
| Under-Rng | ● | Compos-Err | ● |

| Charge [C] 1 | Charge [C] 2 |
|--------------|--------------|
| 1.59e-11 | 0.00e+00 |

| Info | |
|------------|---------------------|
| Cyclestamp | 2019-12-02 19:12:39 |

| Mode | |
|------------|------------|
| Gain Mode | [1] manual |
| Gain Range | [3] 10 nC |

Verbindung zu
GHHPDT1C
aktiv (grüne
LED unten)

WICHTIG:
VACC (jetzt Sequenz S01)
auswählen

Menüzeile nach Verbindung
aktiv geschaltet

Zeitstempel der Messung
und gelbe LED (blinkt)

Messung von Lagung bzw. Teilchenzahl

Keine Panik!
HW-Fehler
ignorieren

The screenshot shows the DTC GUI interface for 'DTC - Resonant Trafo Control'. The main window displays a list of devices on the left, a central graph of Charge [C] vs time [ticks], and a right-hand panel with status indicators. A 'Charge state' dialog box is open in the foreground, prompting the user to specify the charge state before the stripper.

| Vacc: | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |
|----------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|
| Seq-Ind: | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Active: | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |

Charge [C] vs time [ticks] graph showing a flat line at 0.00E0.

| Device Status | | | |
|---------------|-------------------------------------|-----------|-------------------------------------|
| Power | <input checked="" type="checkbox"/> | Interlock | <input checked="" type="checkbox"/> |
| Remote | <input checked="" type="checkbox"/> | SW-Error | <input checked="" type="checkbox"/> |
| NN | <input checked="" type="checkbox"/> | HW-Error | <input checked="" type="checkbox"/> |

| Data Status 1 | | | |
|---------------|-------------------------------------|------------|-------------------------------------|
| Overload | <input checked="" type="checkbox"/> | Over-Rng | <input checked="" type="checkbox"/> |
| Under-Rng | <input checked="" type="checkbox"/> | Compos-Err | <input checked="" type="checkbox"/> |

| Data Status 2 | | | |
|---------------|-------------------------------------|------------|-------------------------------------|
| Overload | <input checked="" type="checkbox"/> | Over-Rng | <input checked="" type="checkbox"/> |
| Under-Rng | <input checked="" type="checkbox"/> | Compos-Err | <input checked="" type="checkbox"/> |

| Charge [C] 1 | Charge [C] 2 |
|--------------|--------------|
| 1.59e-11 | 0.00e+00 |

| Info | |
|------------|---------------------|
| Cyclestamp | 2019-12-02 19:12:39 |

| Mode | |
|------------|------------|
| Gain Mode | [1] manual |
| Gain Range | [3] 10 nC |

Charge state dialog box: Please specify the charge state (consider Stripper position). before Stripper (1..99): 1..99

Setzwerte für
Modus (Hand, Semi-auto, Auto)
Messbereich (1 μ C,, 1 nC)

Umrechnung in Teilchenzahl
Ladungszustand in separatem
Fenster eingeben.

Transmissionsmessung

Wichtig: Transmission bezieht sich IMMER auf GTE1DT1 am SIS18-Ausschuss

Wird GTE1DT1C angewählt, bleibt die Transmissionsmessung ausgegraut und inaktiv!

The screenshot shows the DTC GUI interface. A dialog box titled 'Charge state' is open, prompting the user to specify the charge state before and after the stripper. The dialog contains two input fields: 'before Stripper:' with the value '1..99' and 'after Stripper:' with the value '1..99'. The dialog has 'Cancel' and 'OK' buttons.

In the background, the 'DTC - Resonant Trafo Control' window is visible. It shows a list of components on the left, including GHTPDT1C, GHDDT1C, GHHTDT6C, GHTDDT1C, GHTPDT1C, GTE1DT1C, and GTE5DT1C. The 'GTE1DT1C' component is selected. The main area displays a graph of 'Trans' vs 'time [ticks]' and a 'Device Status' panel on the right. The 'Device Status' panel shows 'Power', 'Remote', and 'NN' all as green, and 'Interlock', 'SW-Error', and 'HW-Error' as red. The 'Data Status 1' and 'Data Status 2' panels show 'Overload' as green and 'Under-Rng' as red. The 'Charge [C] 1' and 'Charge [C] 2' panels show values of '1.59e-11' and '0.00e+00' respectively. The 'Info' panel shows a 'Cyclestamp' of '2019-12-02 19:12:39'. The 'Mode' panel shows 'Gain Mode' as '[1] manual' and 'Gain Range' as '[3] 10 nC'. At the bottom, a 'Transmission' button is highlighted in yellow.

Transmissionsmessung
starten und Ladungswerte in
Eingabefenster definieren

Transmissionsmessung

Schnelle Extraktion ohne Strahl an HTP: Transmission = 0

The screenshot displays the DTC GUI interface for 'DTC - Resonant Trafo Control'. The main window is titled 'DTC GUI' and contains several panels:

- Top Left:** 'GHTPDT1C' section with 'Connect' and 'Disconnect' buttons.
- Top Center:** 'DTC - Resonant Trafo Control' header with a large '1' indicating the selected device.
- Top Right:** 'Device Status' table showing Power, Remote, and NN status.
- Middle Left:** A list of device IDs: GHDDT1C, GHHTDT6C, GHTDDT1C, GHTPDT1C (selected), GTE1DT1C, and GTE5DT1C.
- Middle Center:** Two graphs. The top graph shows 'Charge [C]' vs 'time [ticks]' with a y-axis from -0.00E0 to 1.00E-8. The bottom graph shows 'Transmission [%]' vs 'time [ticks]' with a y-axis from -0 to 100.
- Middle Right:** 'Standard Transmission' section with 'Data Status 1' and 'Data Status 2' tables. Below these are 'Charge [C] TE1' (6.58e-09) and 'Transmission [%]' (0.0 %).
- Bottom:** A status bar with 'Logge', 'Transmission' (checked), 'Particles' (unchecked), 'OP-Mode', and 'acqstamp: 2019-12-02 19:29:01'.

A yellow callout box points to the 'Transmission' checkbox and the 'Transmission [%]' value, containing the text: 'Transmissionsmessung aktiv Umrechnung in Teilchenzahl zusätzlich anwählbar (Lad.-werte sind definiert über vorherige Eingabe)'.

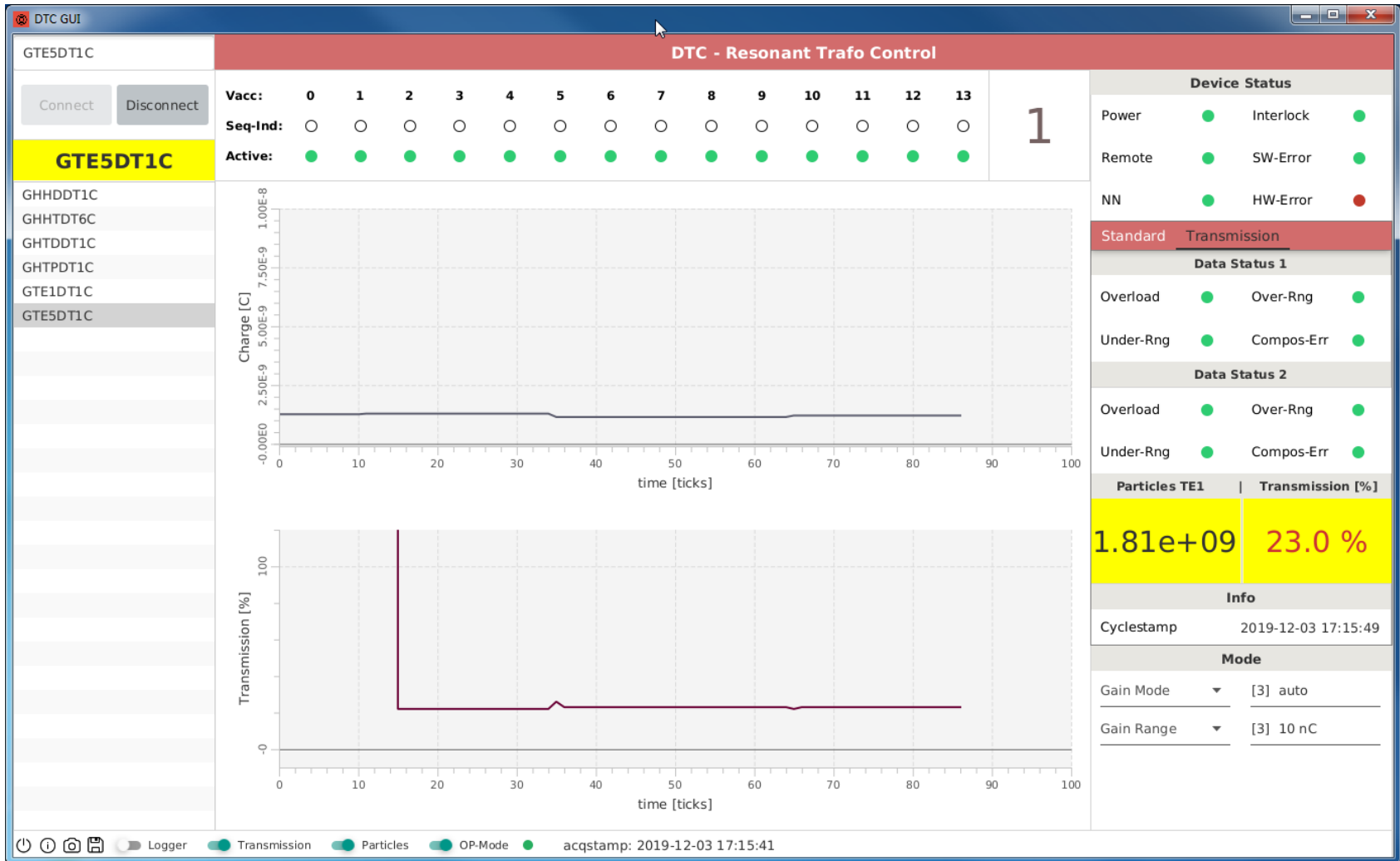
| Device Status | | | |
|---------------|---|-----------|---|
| Power | ● | Interlock | ● |
| Remote | ● | SW-Error | ● |
| NN | ● | HW-Error | ● |

| Standard Transmission | | | |
|-----------------------|---|------------|---|
| Data Status 1 | | | |
| Overload | ● | Over-Rng | ● |
| Under-Rng | ● | Compos-Err | ● |
| Data Status 2 | | | |
| Overload | ● | Over-Rng | ● |
| Under-Rng | ● | Compos-Err | ● |

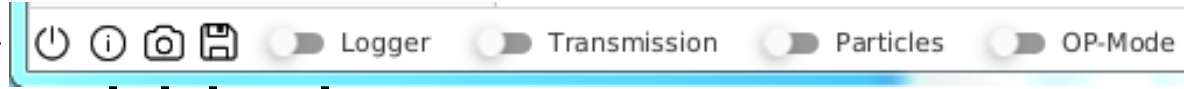
| Charge [C] TE1 | Transmission [%] |
|----------------|------------------|
| 6.58e-09 | 0.0 % |

Transmissionsmessung mit Teilchenzahl & OP-Modus

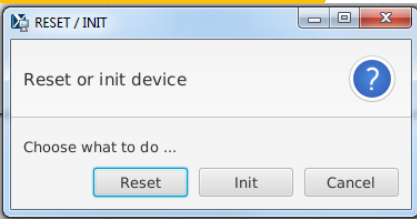
Im OP-Modus werden der Gerätename und die Messwerte hervorgehoben



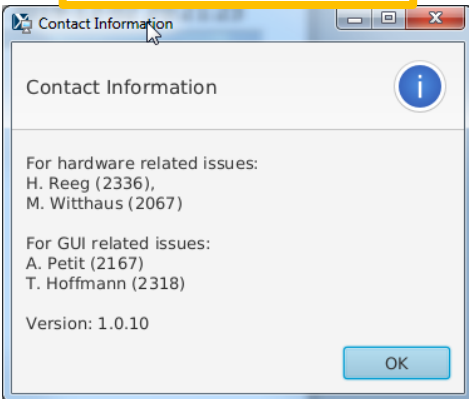
Menüzeile: Weitere Funktionen



Reset (Warmstart)
Init (Kaltstart)

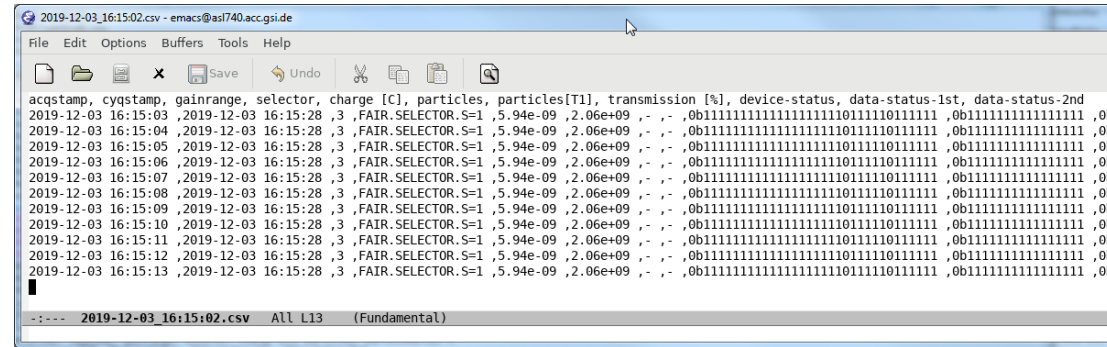


Infofenster anzeigen



Darstellung der Ladung in μC , nC , pC , fC . Faktor 1000 zu klein!?!)

Daten in einfaches, lokales CSV File schreiben



Screenshot (png) auf lokalem Rechner
speichern per Filebrowser.

Screenshot auf Clipboard speichern (für 4 Wochen)



Ablauf der Messung / Timing

4.5 Festlegung[↓] von Startwerten

4.5.1 Kaltstarts

Bei einem Kaltstart werden folgende Aktionen durchgeführt:

- Mit dem Funktionscode `ifb_reset` wird ein Gerätereset durchgeführt.
- Alle Sollwerte werden für alle virtuellen Beschleuniger folgendermaßen initialisiert:

| Bedeutung | Wert bei Kaltstart |
|------------------|--------------------|
| Meßbereichsmodus | manuell |
| Meßbereich | 1 (unempfindlich) |

- Alle Istwerte und Timestamps werden mit 0 initialisiert.
- Das Gerät wird für alle virtuellen Beschleuniger auf „aktiv“ gesetzt
- Bei einem Kaltstart der SE wird diese in den Eventmode-Betrieb geschaltet.
- Bei einem Kaltstart der SE werden die Standard-Eventkonnektierungen gesetzt (siehe Tabelle 3 auf Seite 12).

4.5.2 Warmstarts

Bei einem Warmstart werden folgende Aktionen durchgeführt:

- Mit dem Funktionscode `ifb_reset` wird ein Gerätereset durchgeführt.
- Alle Istwerte und Timestamps werden mit 0 initialisiert.

Ablauf der Messung / Timing

4.4 Einordnung in das Timing

Das Gerät nimmt an der Puls-zu-Puls-Modulation teil.

Ein Beispiel eines SIS Standardzyklus mit relevanten Events für *Resonante Trafos* ist in Abbildung 1 angegeben.

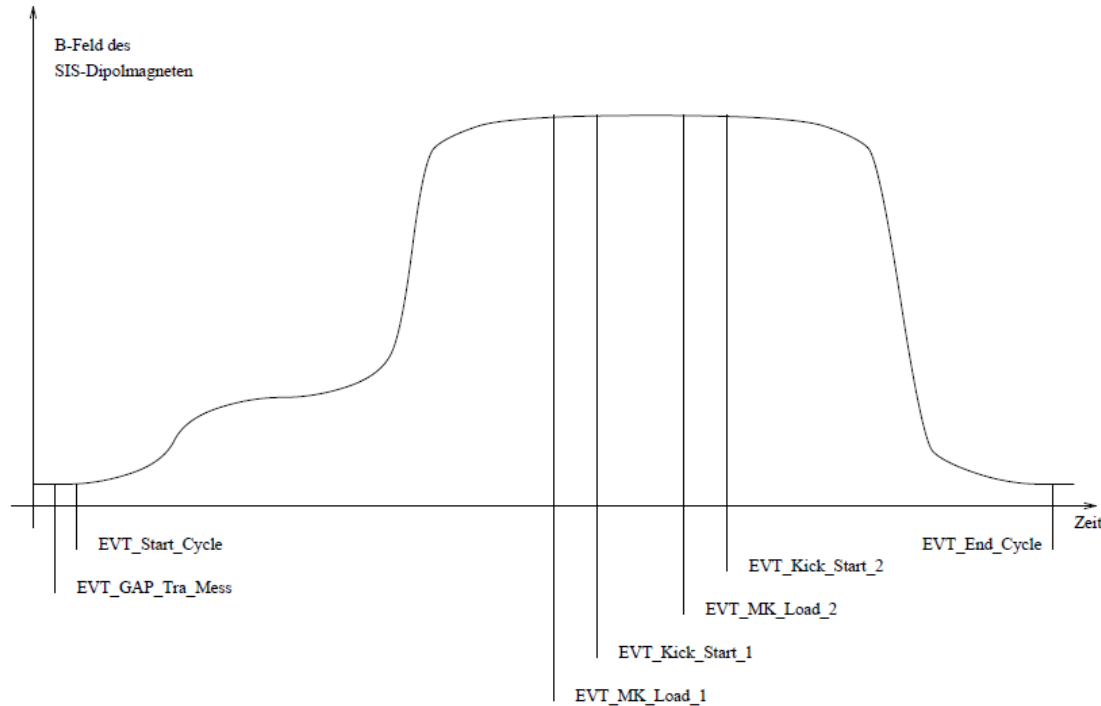


Abbildung 1: Standardzyklus mit relevanten Events für *Resonante Trafos*

| Aktion | Event |
|--|-----------------------|
| Messung vorbereiten | Evt_MK_Load_1 (47) |
| Messung vorbereiten | Evt_MK_Load_2 (48) |
| Meßwerte lesen, Datenstatus generieren | Evt_Kick_Start_1 (49) |
| Meßwerte lesen, Datenstatus generieren | Evt_Kick_Start_2 (69) |
| Meßdaten als gültig kennzeichnen | Evt_End_Cycle (55) |
| Flag für Transmissionsmessung setzen | Evt_Gap_Tra_Mess (97) |

Tabelle 3: Standard-Eventkonnektierungen für *Resonante Trafos*