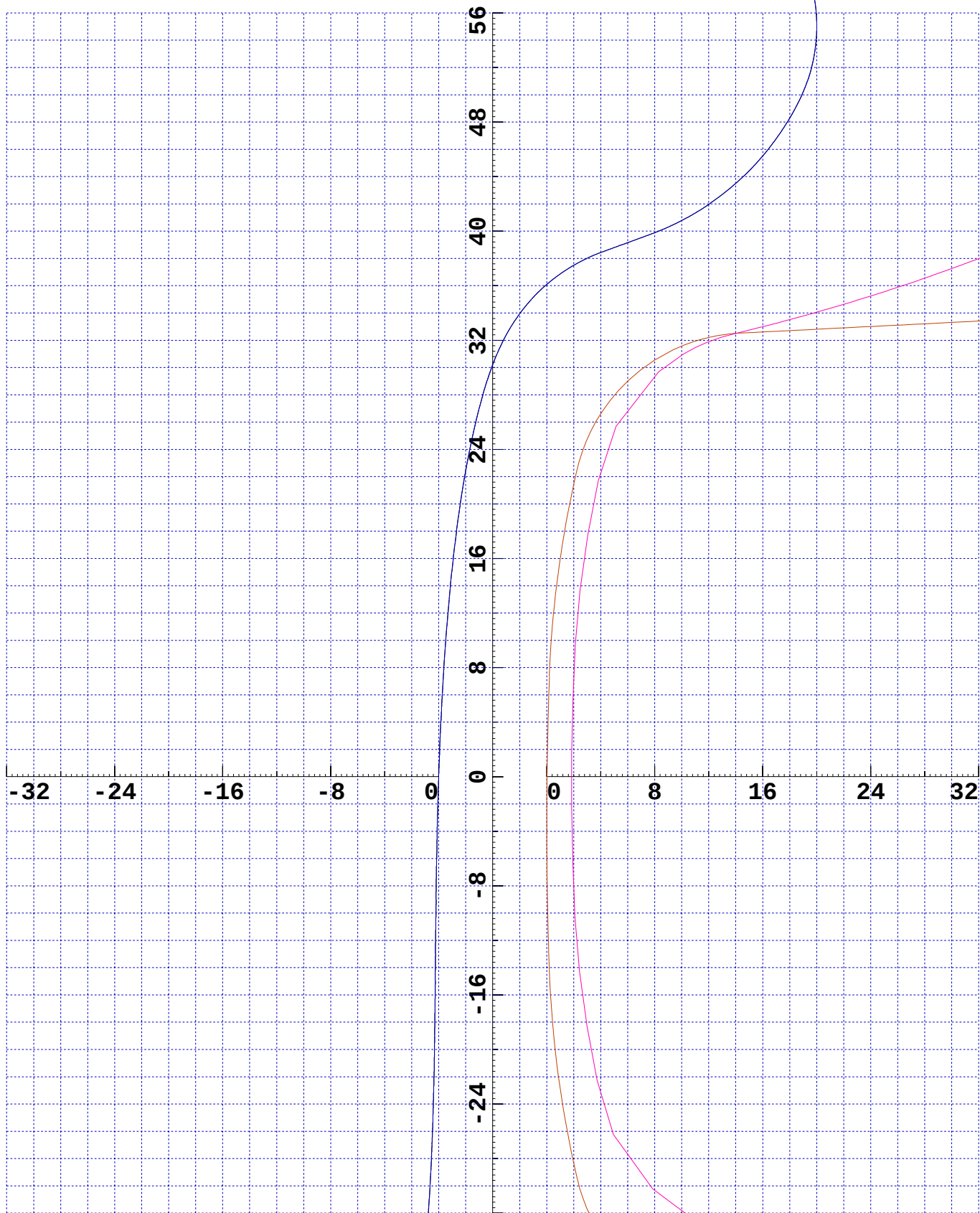
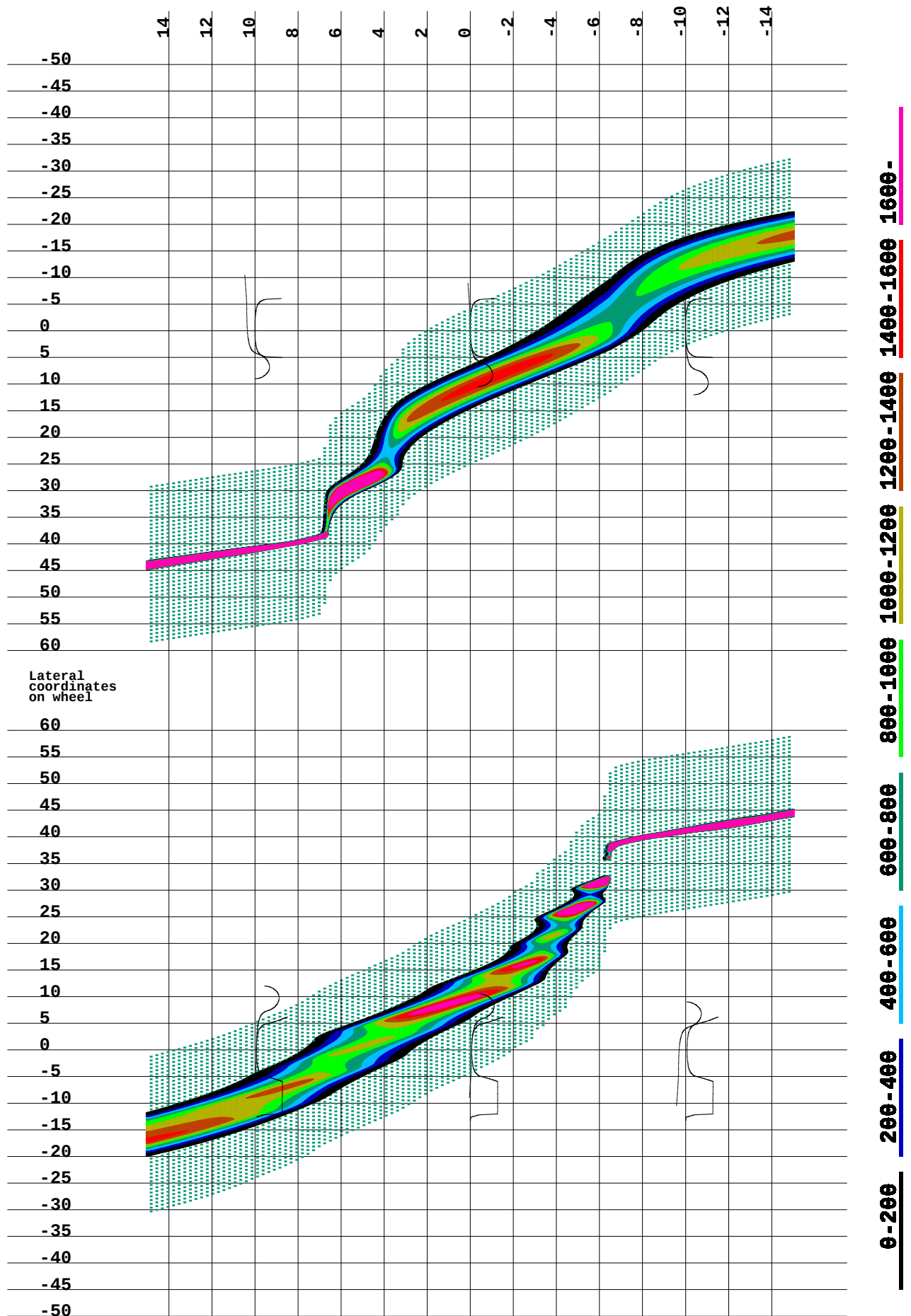


- Right wheel
- Left wheel
- Right rail
- Left rail



Left wheel: S1002t32.5.wheel    Right wheel: S1002t32.5.wheel    WRGEOM  
Left rail: r\_prof/SEC023\_l.short.rail    Right rail: r\_prof/SEC023\_r.short.rail  
wprof\_lat\_shift= 0    Gauge= 1425-1441

Ident: kpfr\_023

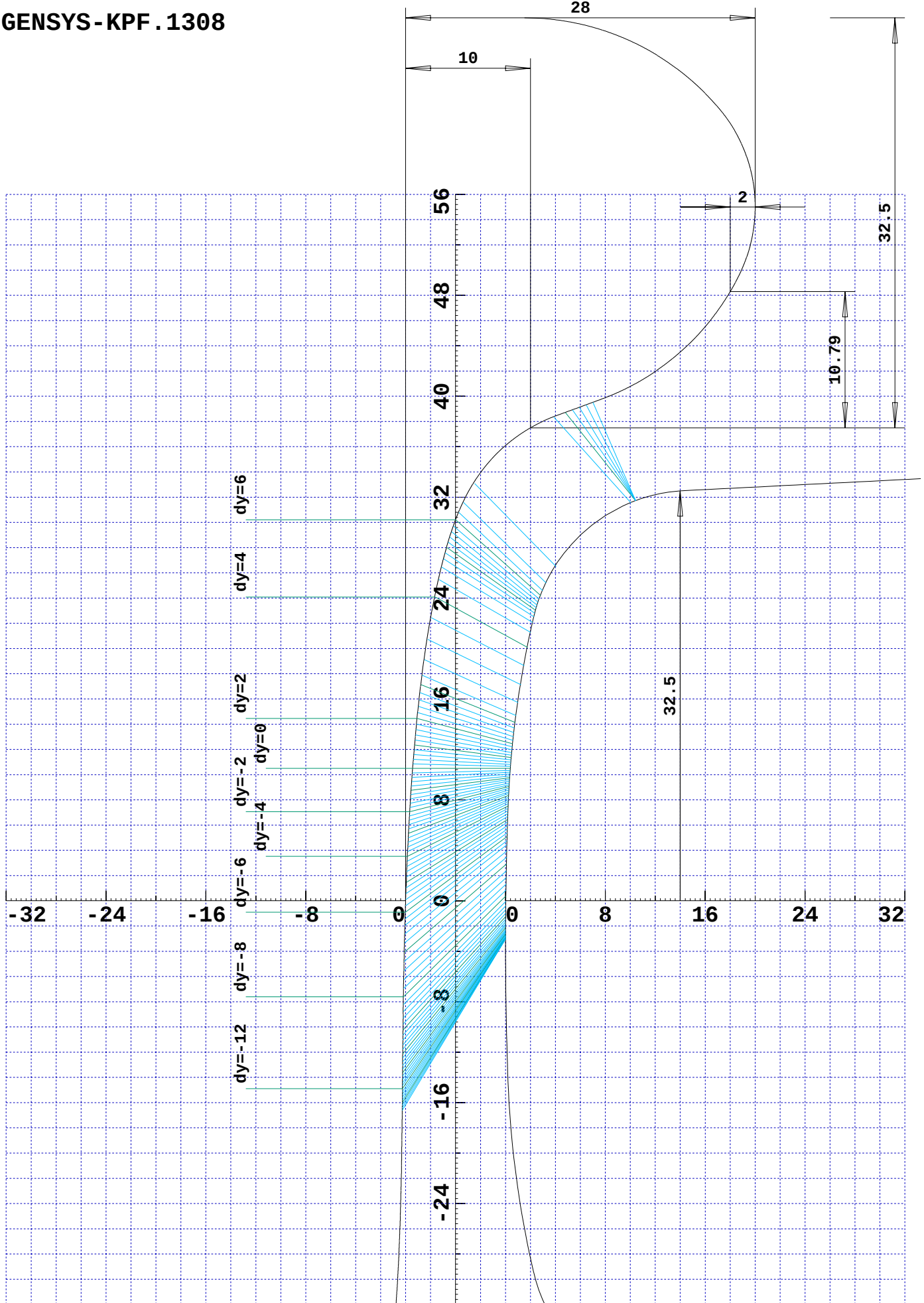


Left wheel: S1002t32.5.wheel    Right wheel: S1002t32.5.wheel

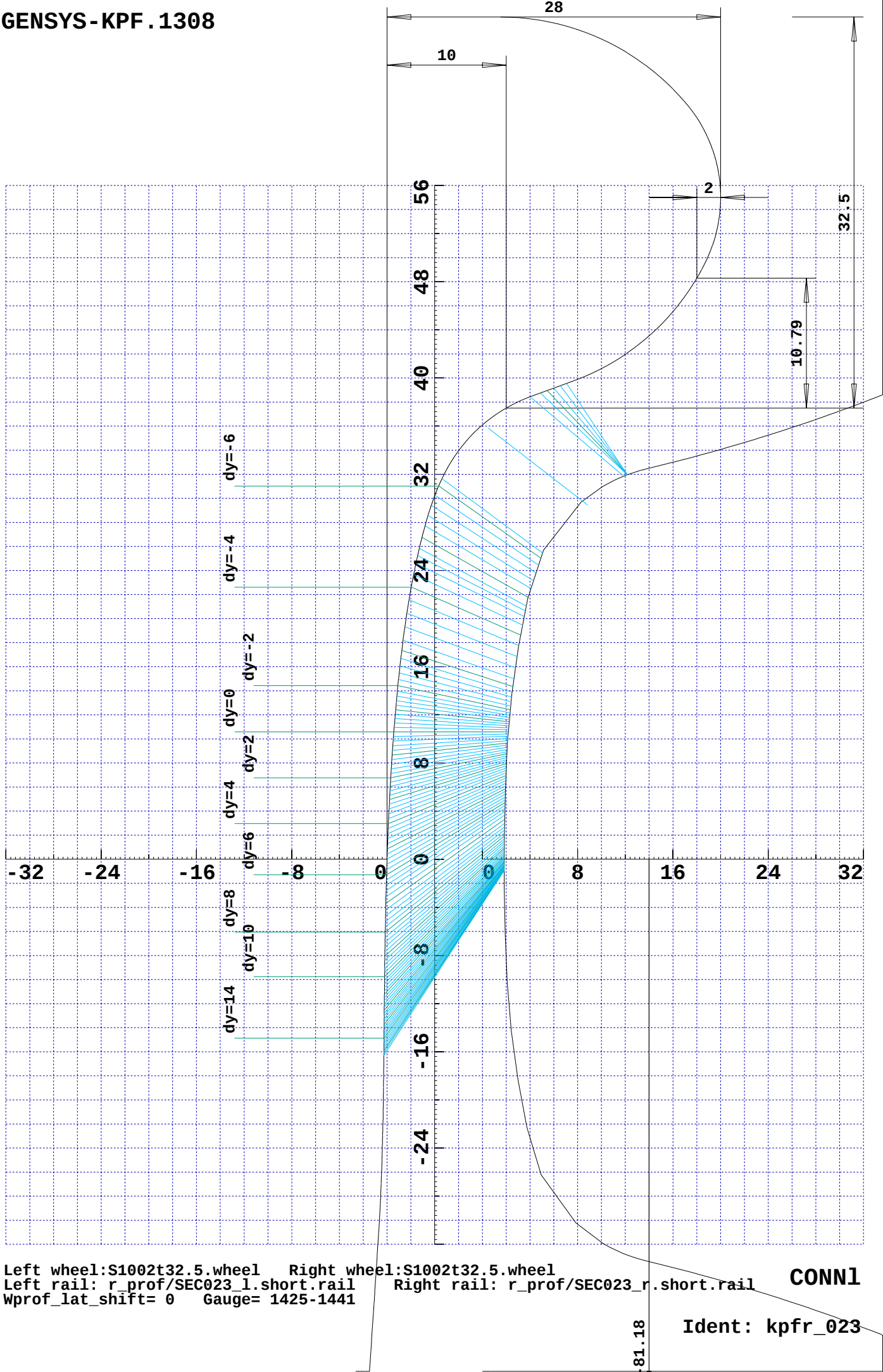
Left rail: r\_prof/SEC023\_l.short.rail    Right rail: r\_prof/SEC023\_r.sho

Wprof\_lat\_shift= 0    Gauge= 1425-1441

Contact Pressure

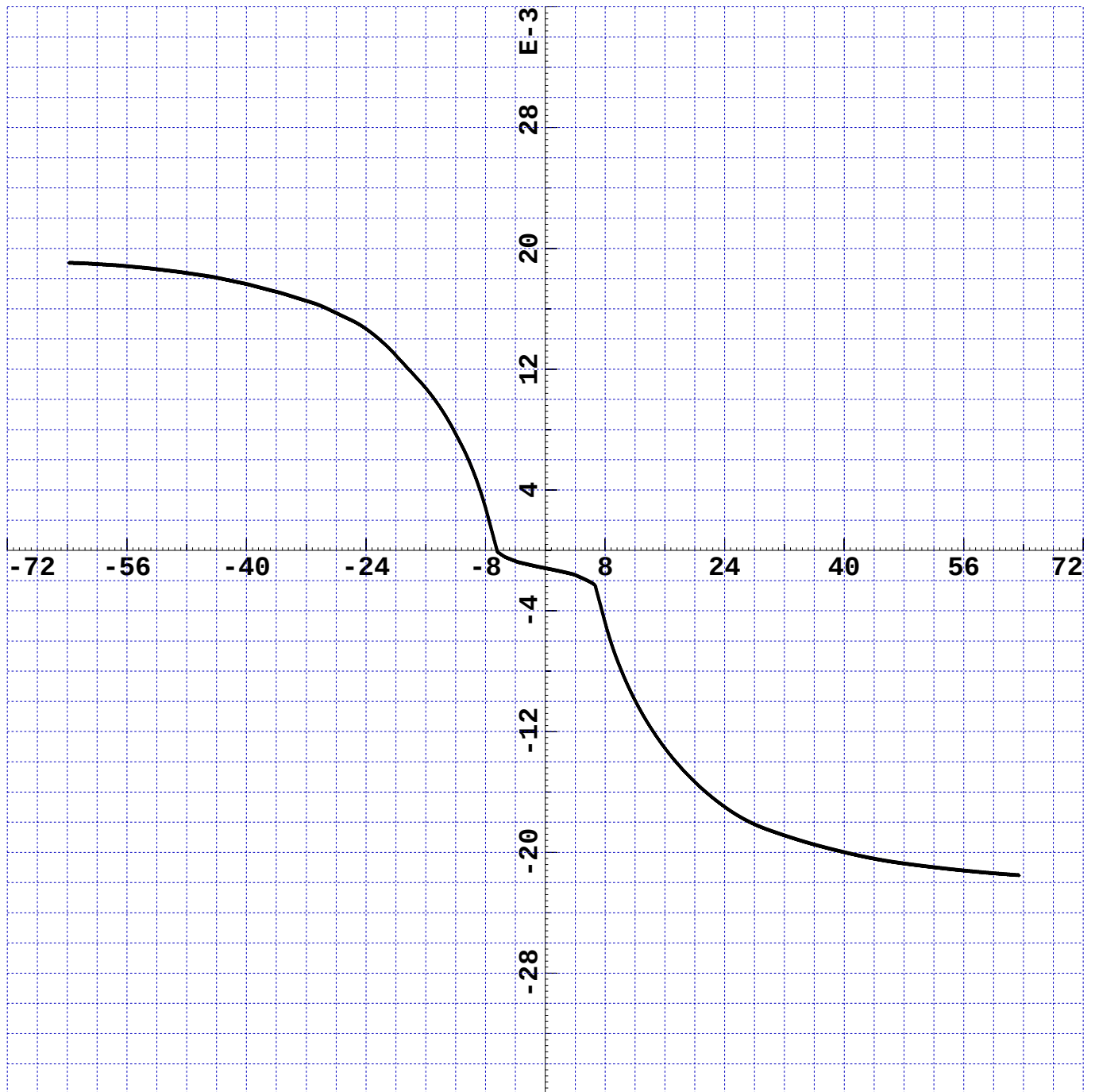
**CONNr**

**Ident: kpfr\_023**



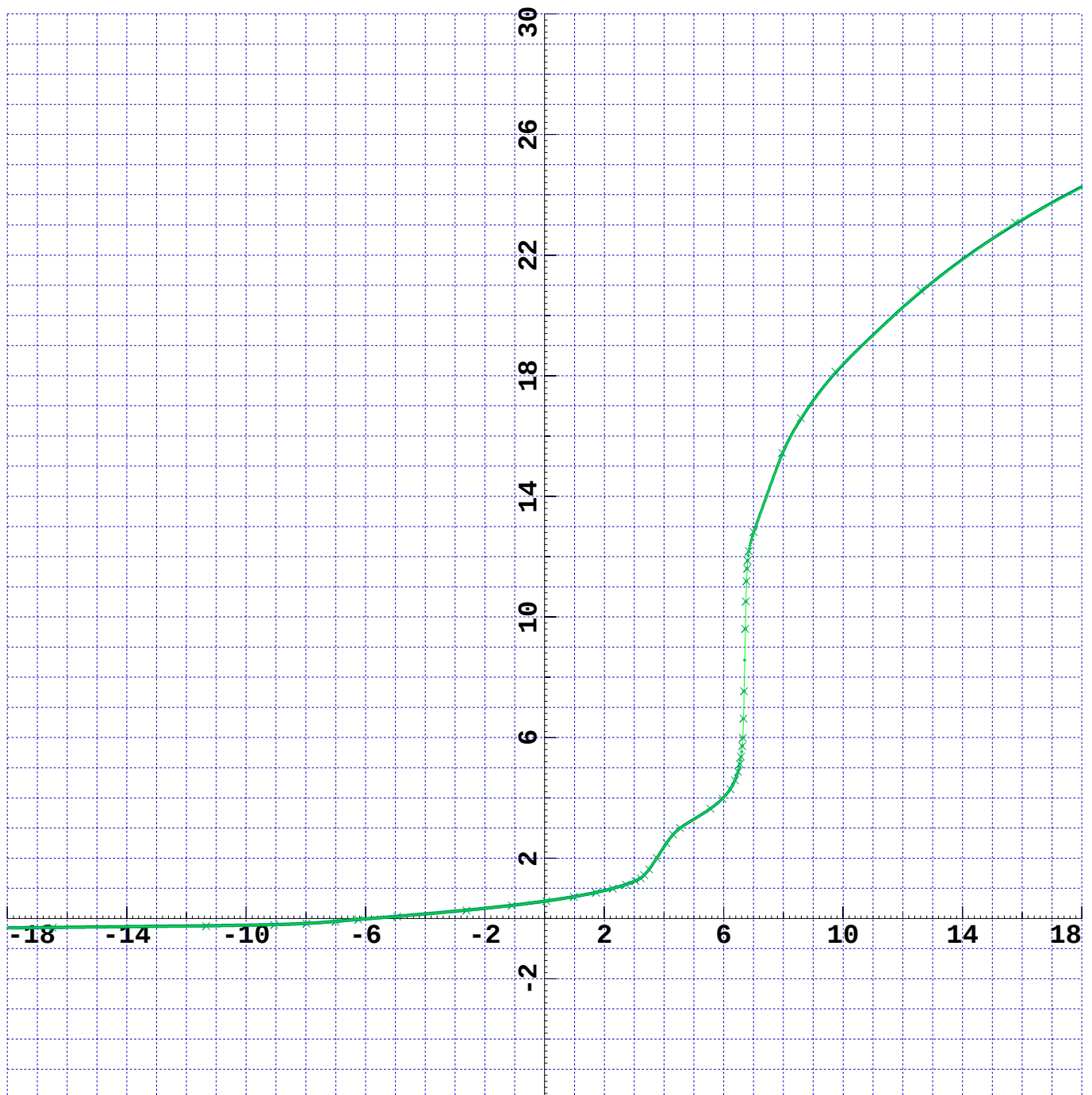
Left wheel: S1002t32.5.wheel    Right wheel: S1002t32.5.wheel    CONN1  
Left rail: r\_prof/SEC023\_l.short.rail    Right rail: r\_prof/SEC023\_r.short.rail  
Wprof\_lat\_shift= 0    Gauge= 1425-1441

Ident: kpfr\_023  
-81.18



Left wheel: S1002t32.5.wheel    Right wheel: S1002t32.5.wheel    **Flax1**  
Left rail: r\_prof/SEC023\_l.short.rail    Right rail: r\_prof/SEC023\_r.short.rail  
wprof\_lat\_shift= 0    Gauge= 1425-1441

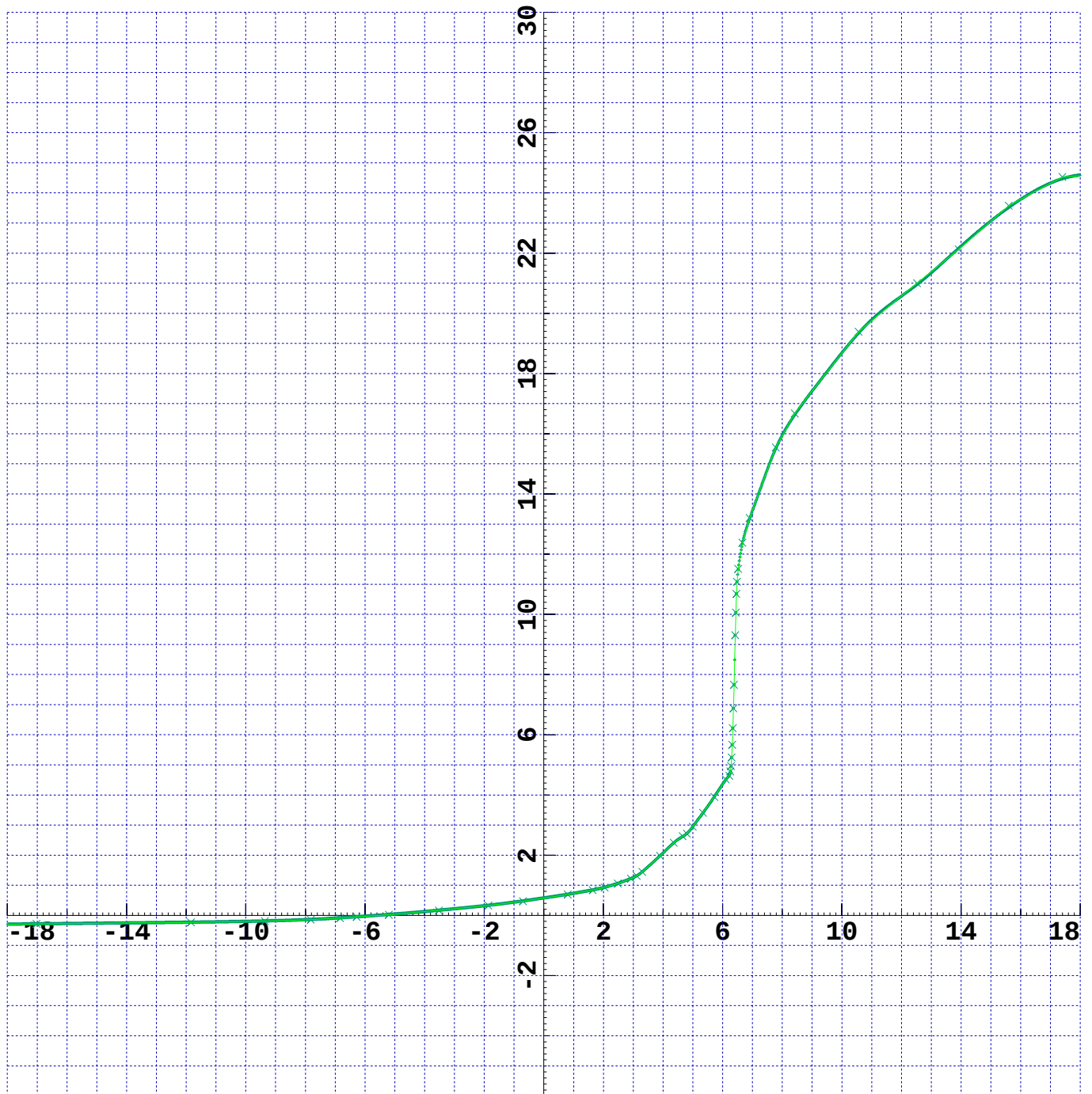
Ident: kpfr\_023



Left wheel: S1002t32.5.wheel    Right wheel: S1002t32.5.wheel  
Left rail: r\_prof/SEC023\_l.short.rail    Right rail: r\_prof/SEC023\_r.short.rail  
wprof\_lat\_shift= 0    Gauge= 1425-1441

DRFNr

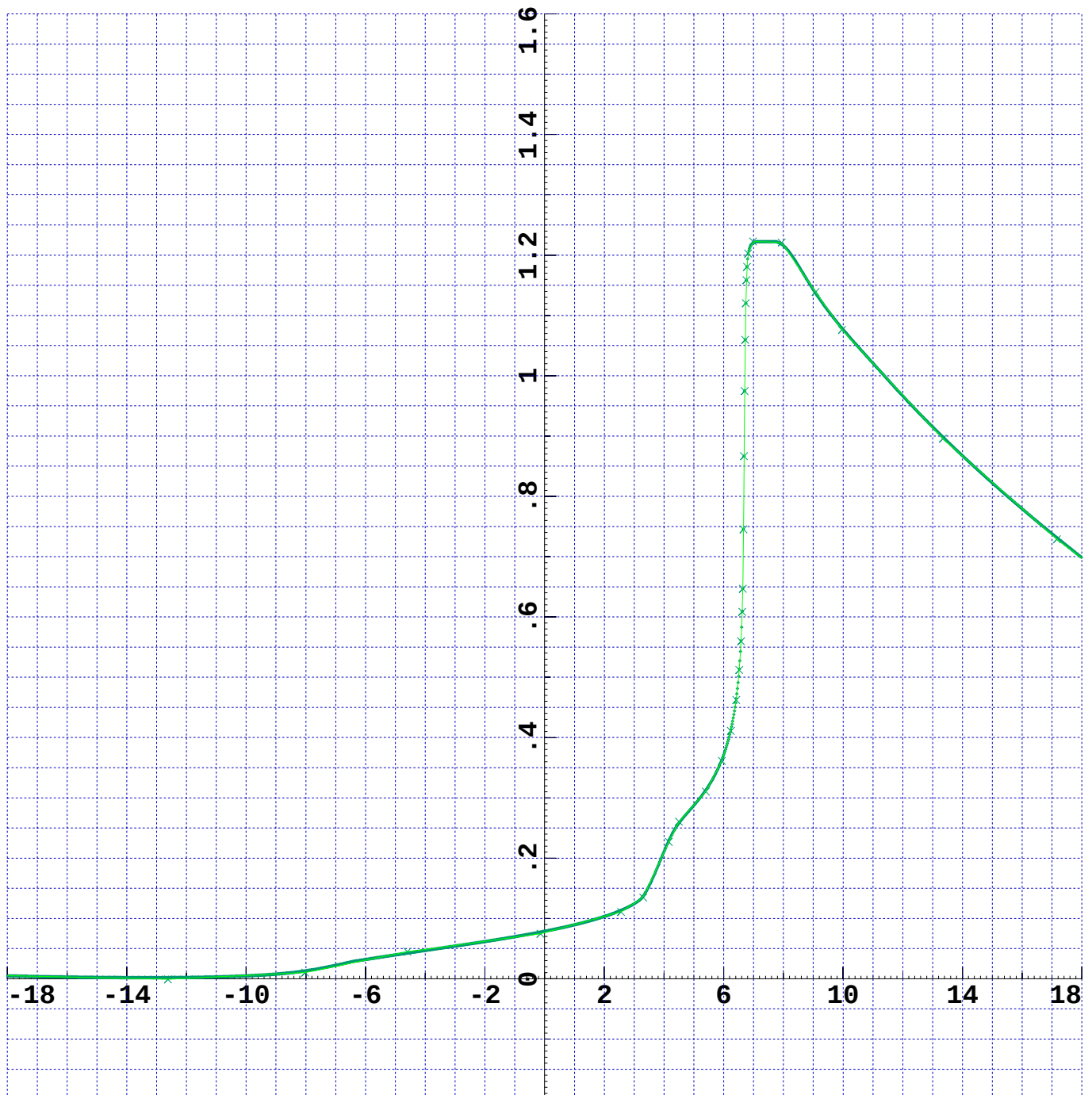
Ident: kpfr\_023



Left wheel: S1002t32.5.wheel    Right wheel: S1002t32.5.wheel  
Left rail: r\_prof/SEC023\_l.short.rail    Right rail: r\_prof/SEC023\_r.short.rail  
wprof\_lat\_shift= 0    Gauge= 1425-1441

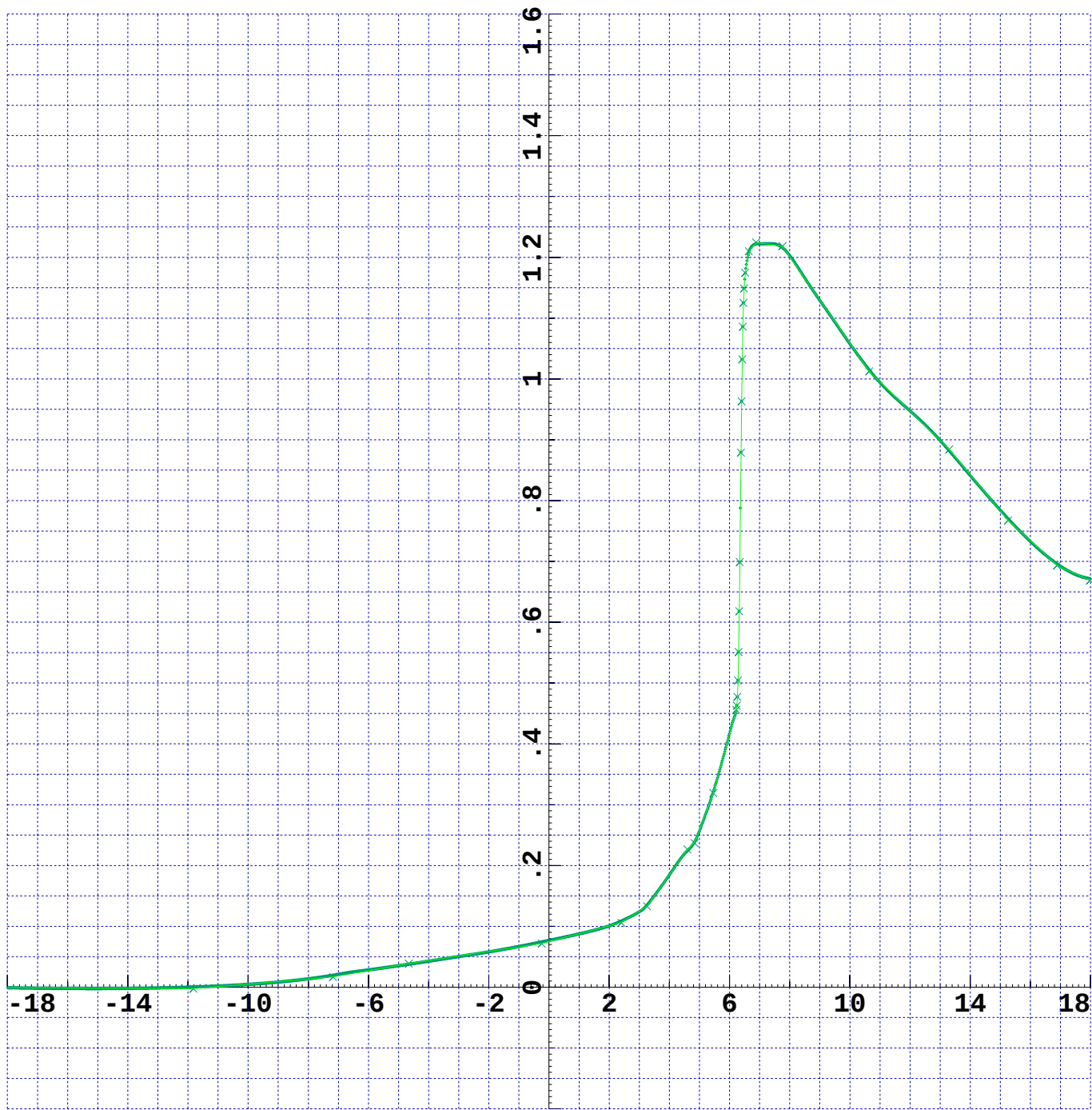
DRFN1

Ident: kpfr\_023



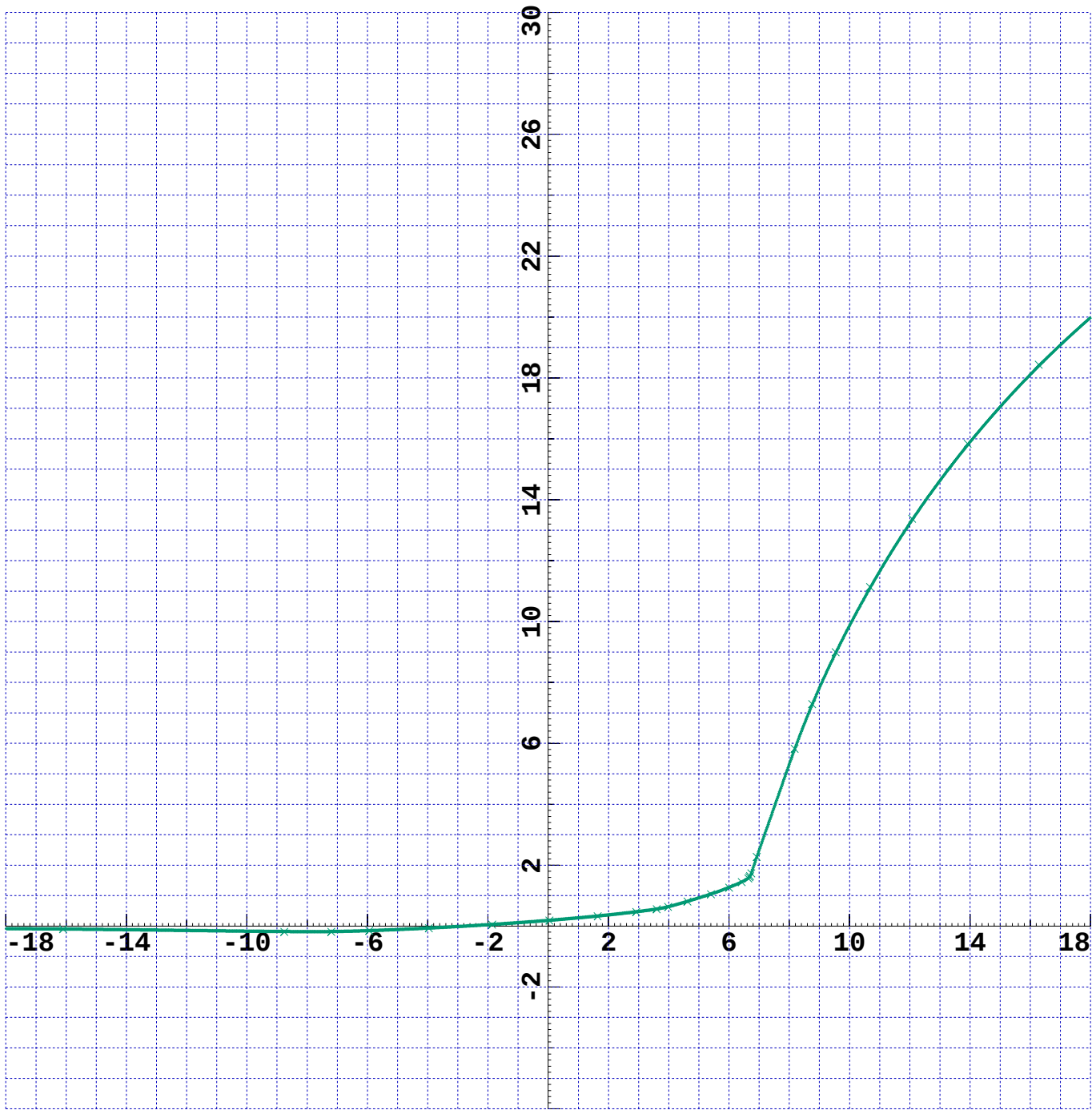
Left wheel: S1002t32.5.wheel    Right wheel: S1002t32.5.wheel    GAMFNR  
Left rail: r\_prof/SEC023\_l.short.rail    Right rail: r\_prof/SEC023\_r.short.rail  
wprof\_lat\_shift= 0    Gauge= 1425-1441

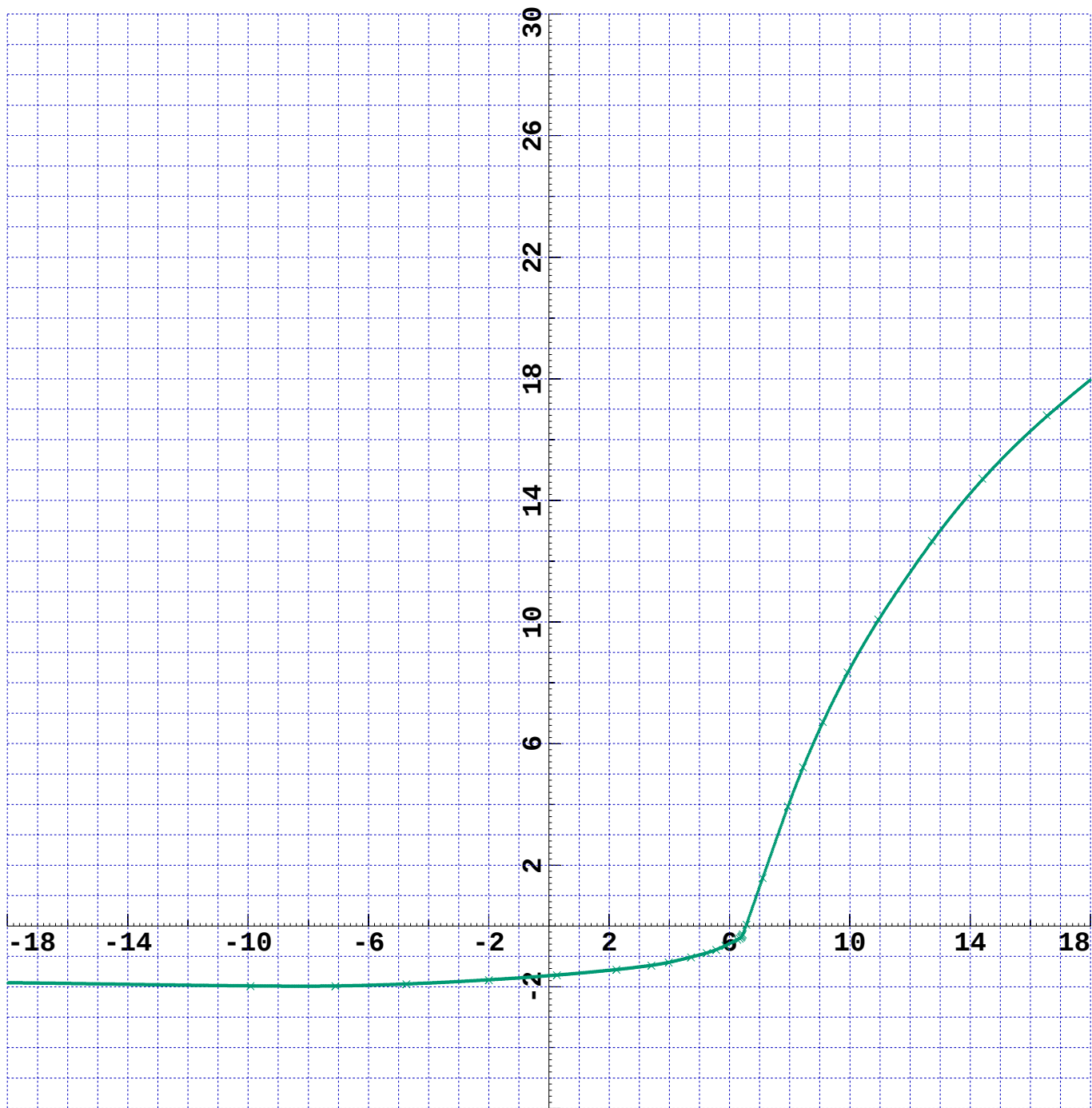
Ident: kpfr\_023



Left wheel:S1002t32.5.wheel    Right wheel:S1002t32.5.wheel    GAMFN1  
Left rail: r\_prof/SEC023\_l.short.rail    Right rail: r\_prof/SEC023\_r.short.rail  
wprof\_lat\_shift= 0    Gauge= 1425-1441

Ident: kpfr\_023





Left wheel: S1002t32.5.wheel    Right wheel: S1002t32.5.wheel    ZFN1  
Left rail: r\_prof/SEC023\_l.short.rail    Right rail: r\_prof/SEC023\_r.short.rail  
Wprof\_lat\_shift= 0    Gauge= 1425-1441

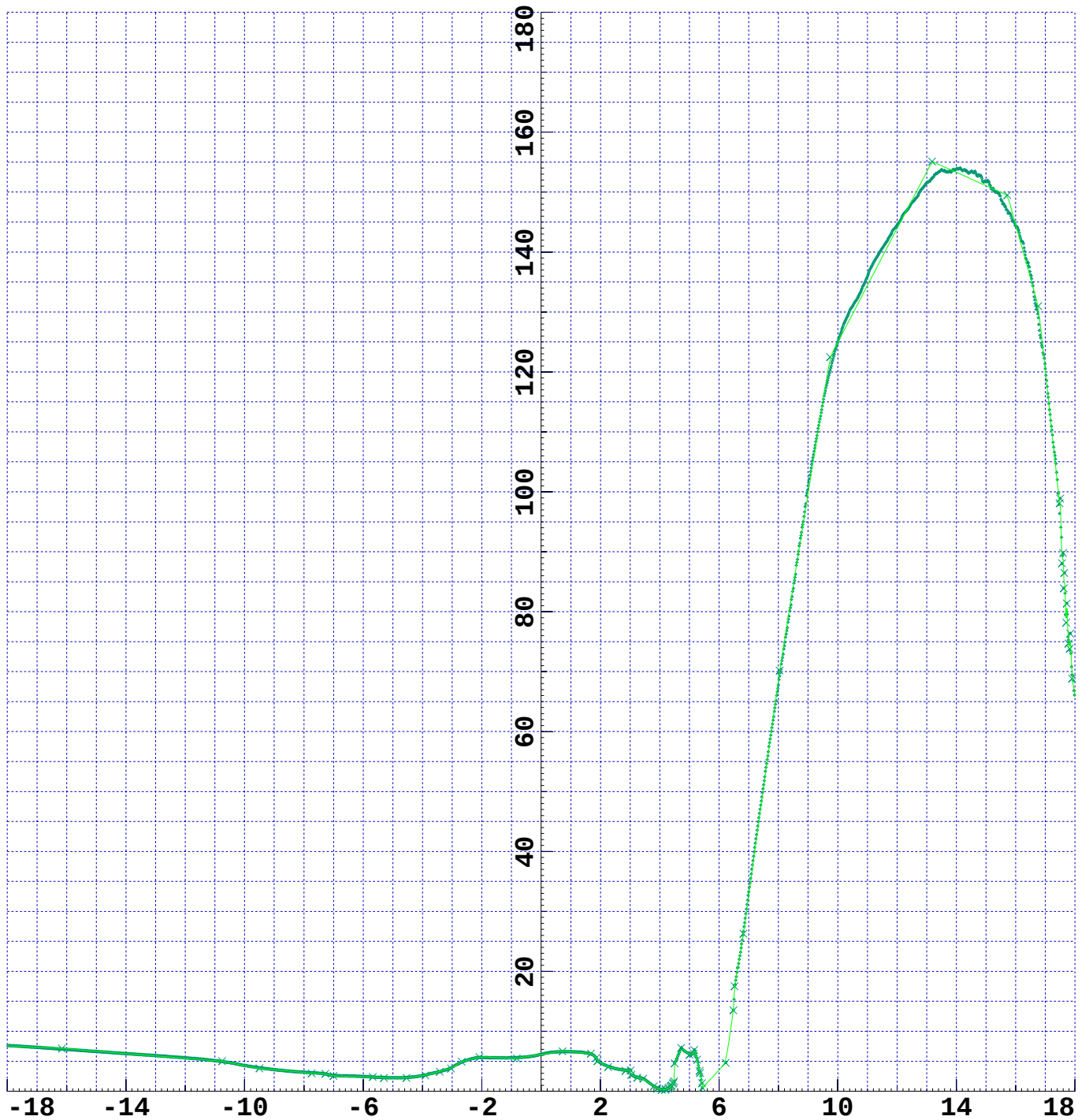
Ident: kpfr\_023



Left wheel: S1002t32.5.wheel    Right wheel: S1002t32.5.wheel  
Left rail: r\_prof/SEC023\_l.short.rail    Right rail: r\_prof/SEC023\_r.short.rail  
wprof\_lat\_shift= 0    Gauge= 1425-1441

ROFNr

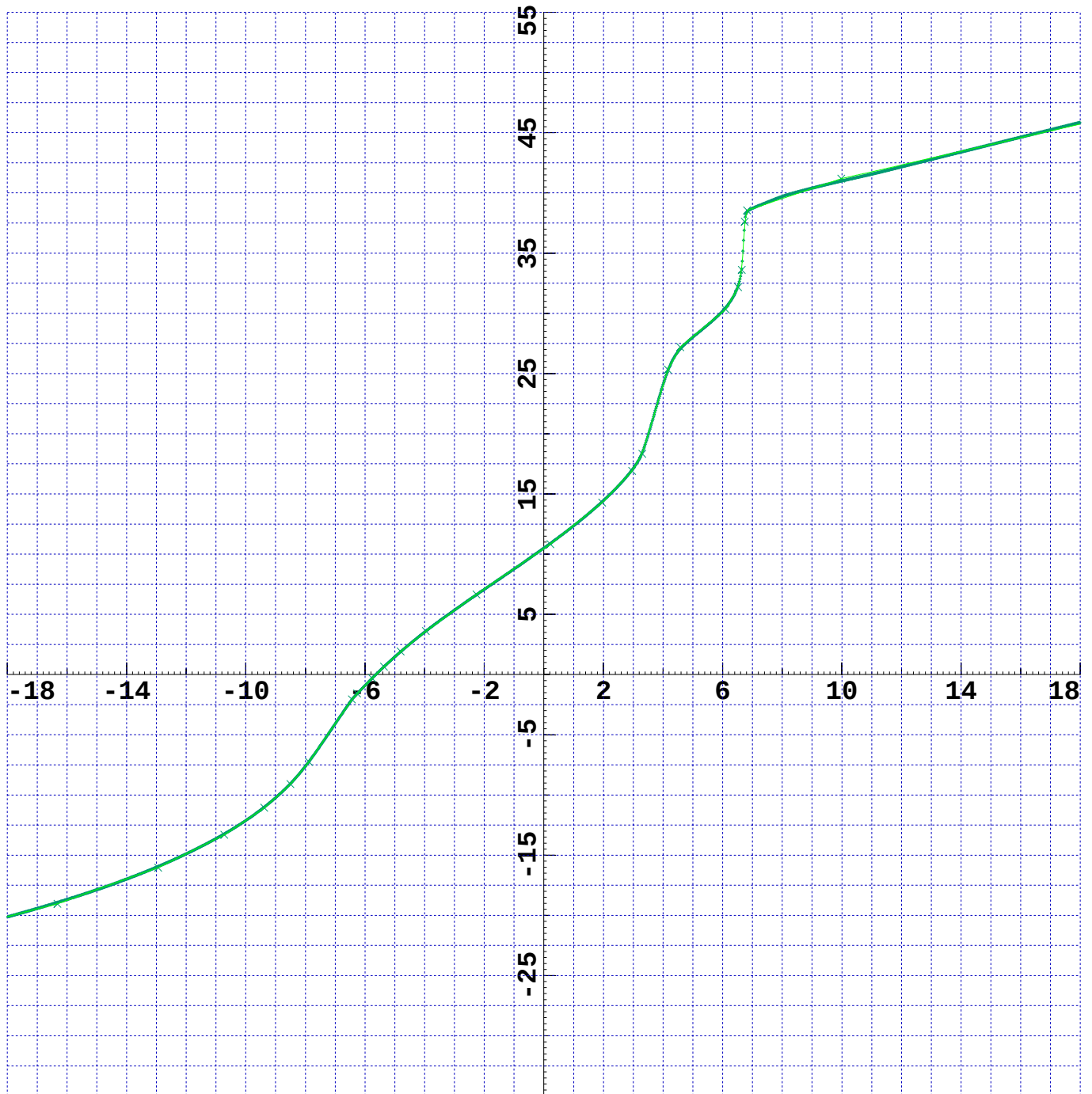
Ident: kpfr\_023



Left wheel: S1002t32.5.wheel    Right wheel: S1002t32.5.wheel  
Left rail: r\_prof/SEC023\_l.short.rail    Right rail: r\_prof/SEC023\_r.short.rail  
wprof\_lat\_shift= 0    Gauge= 1425-1441

ROFN1

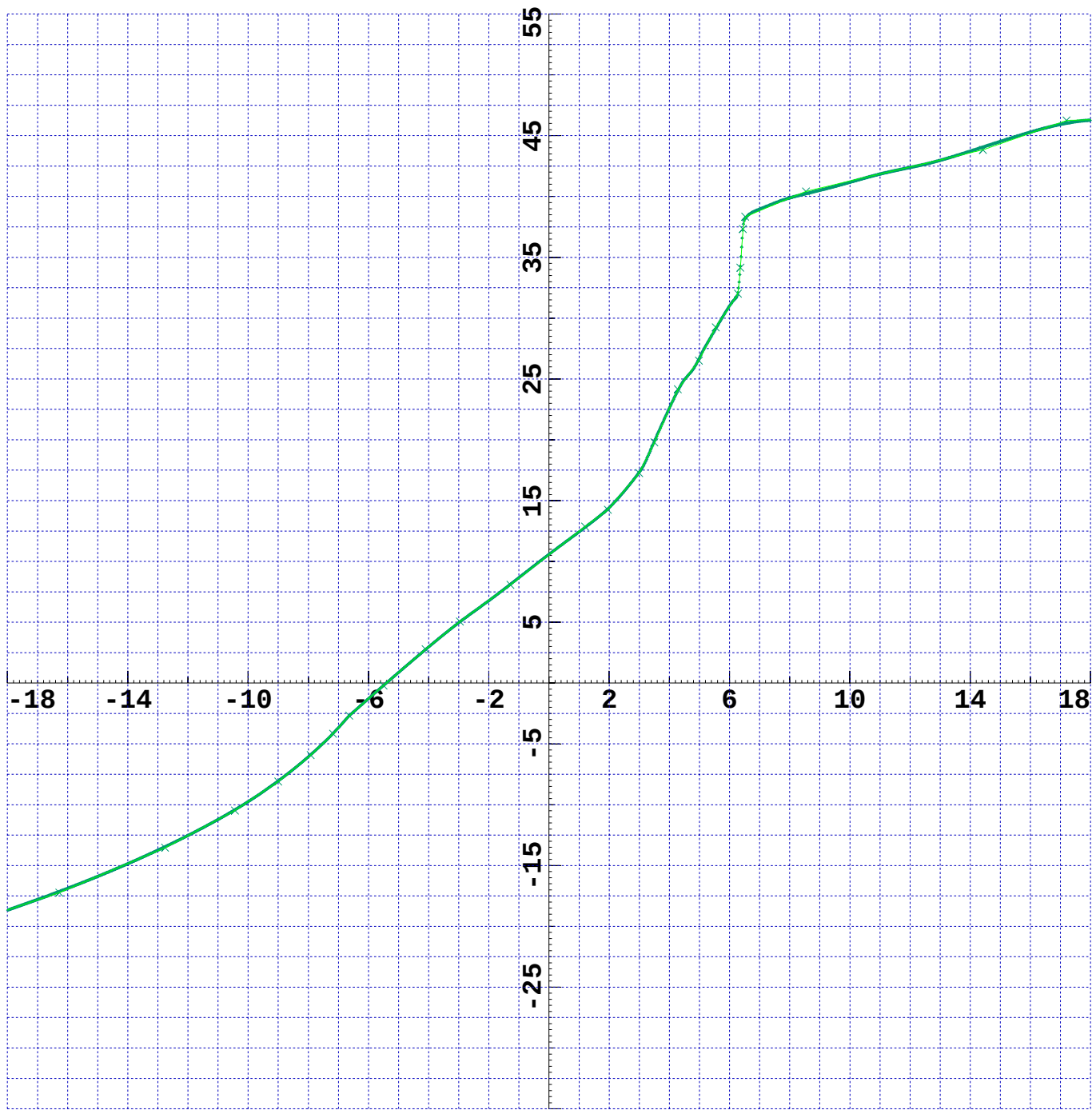
Ident: kpfr\_023



Left wheel: S1002t32.5.wheel    Right wheel: S1002t32.5.wheel  
Left rail: r\_prof/SEC023\_l.short.rail    Right rail: r\_prof/SEC023\_r.short.rail  
wprof\_lat\_shift= 0    Gauge= 1425-1441

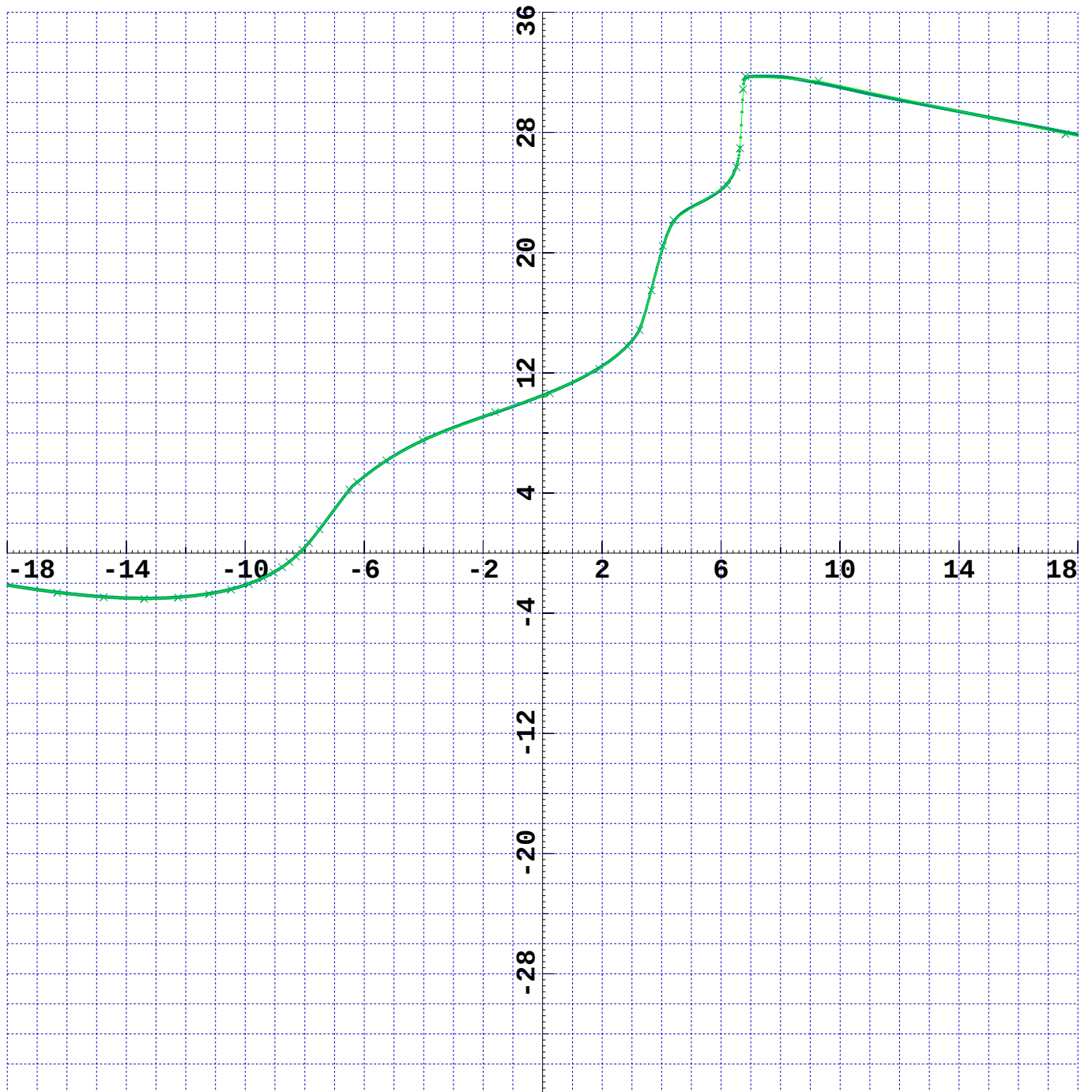
POSWr

Ident: kpfr\_023



Left wheel: S1002t32.5.wheel    Right wheel: S1002t32.5.wheel    POSW1  
Left rail: r\_prof/SEC023\_l.short.rail    Right rail: r\_prof/SEC023\_r.short.rail  
Wprof\_lat\_shift= 0    Gauge= 1425-1441

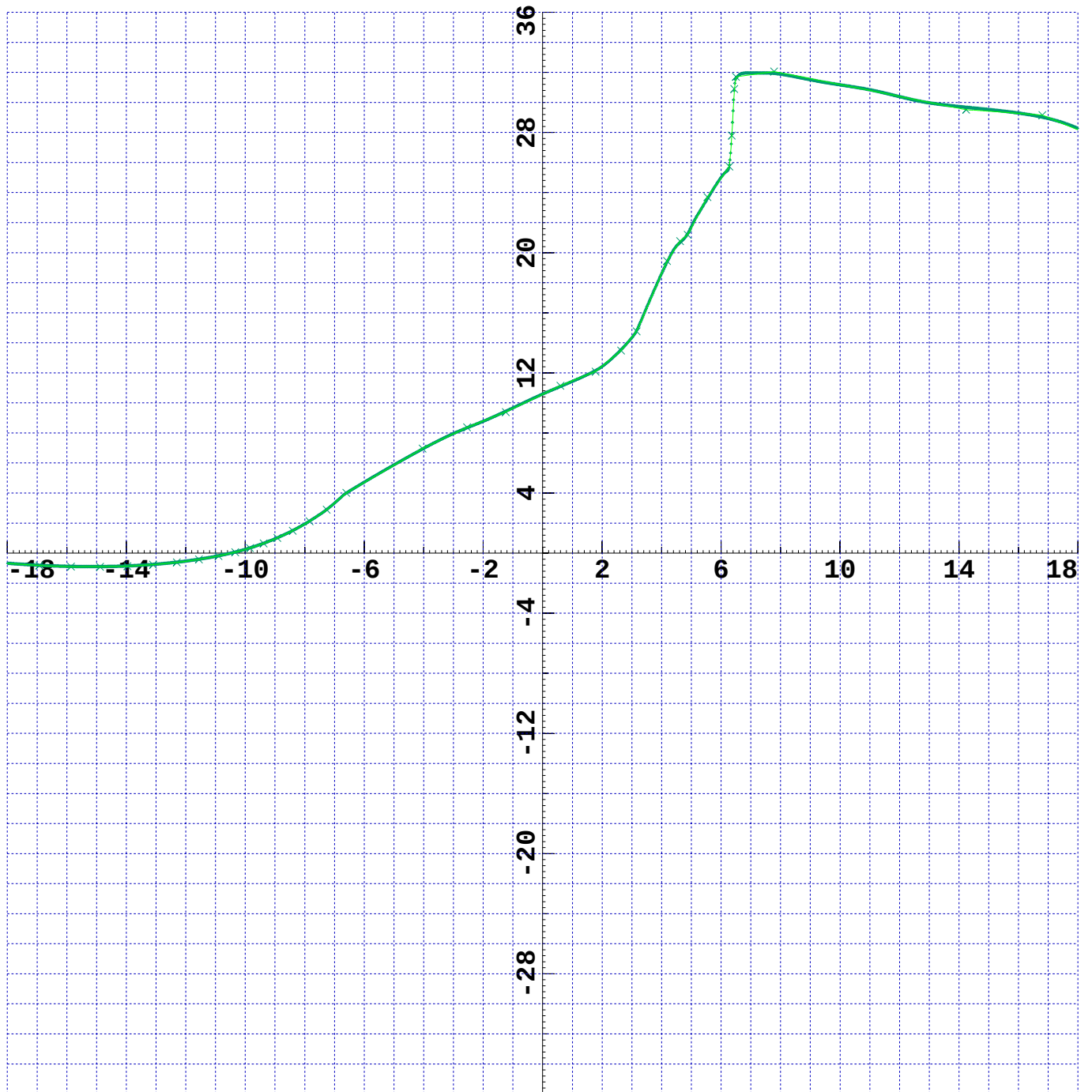
Ident: kpfr\_023



Left wheel: S1002t32.5.wheel    Right wheel: S1002t32.5.wheel  
Left rail: r\_prof/SEC023\_l.short.rail    Right rail: r\_prof/SEC023\_r.short.rail  
wprof\_lat\_shift= 0    Gauge= 1425-1441

**POSRR**

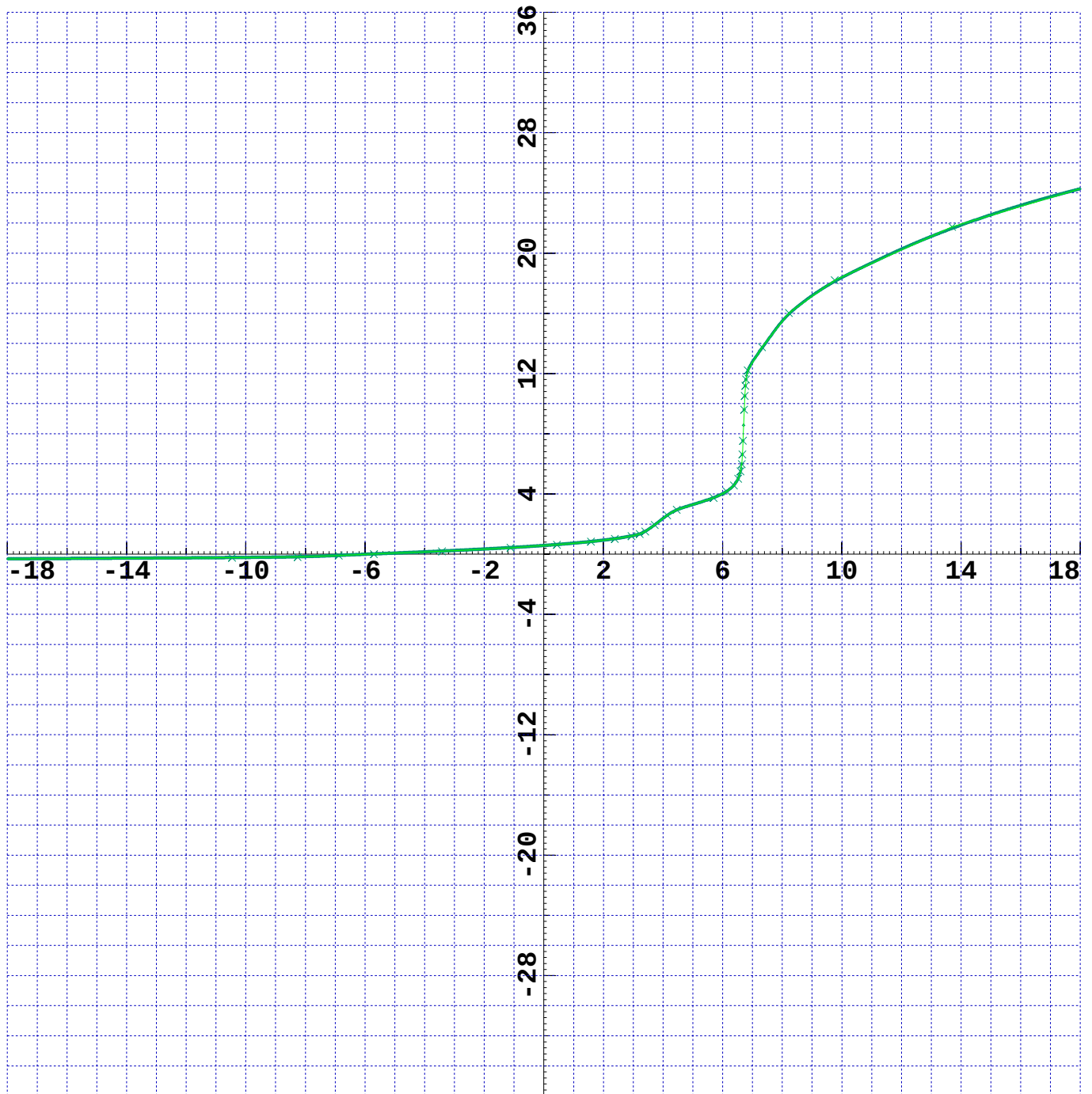
Ident: kpfr\_023



Left wheel: S1002t32.5.wheel    Right wheel: S1002t32.5.wheel  
Left rail: r\_prof/SEC023\_l.short.rail    Right rail: r\_prof/SEC023\_r.short.rail  
wprof\_lat\_shift= 0    Gauge= 1425-1441

POSR1

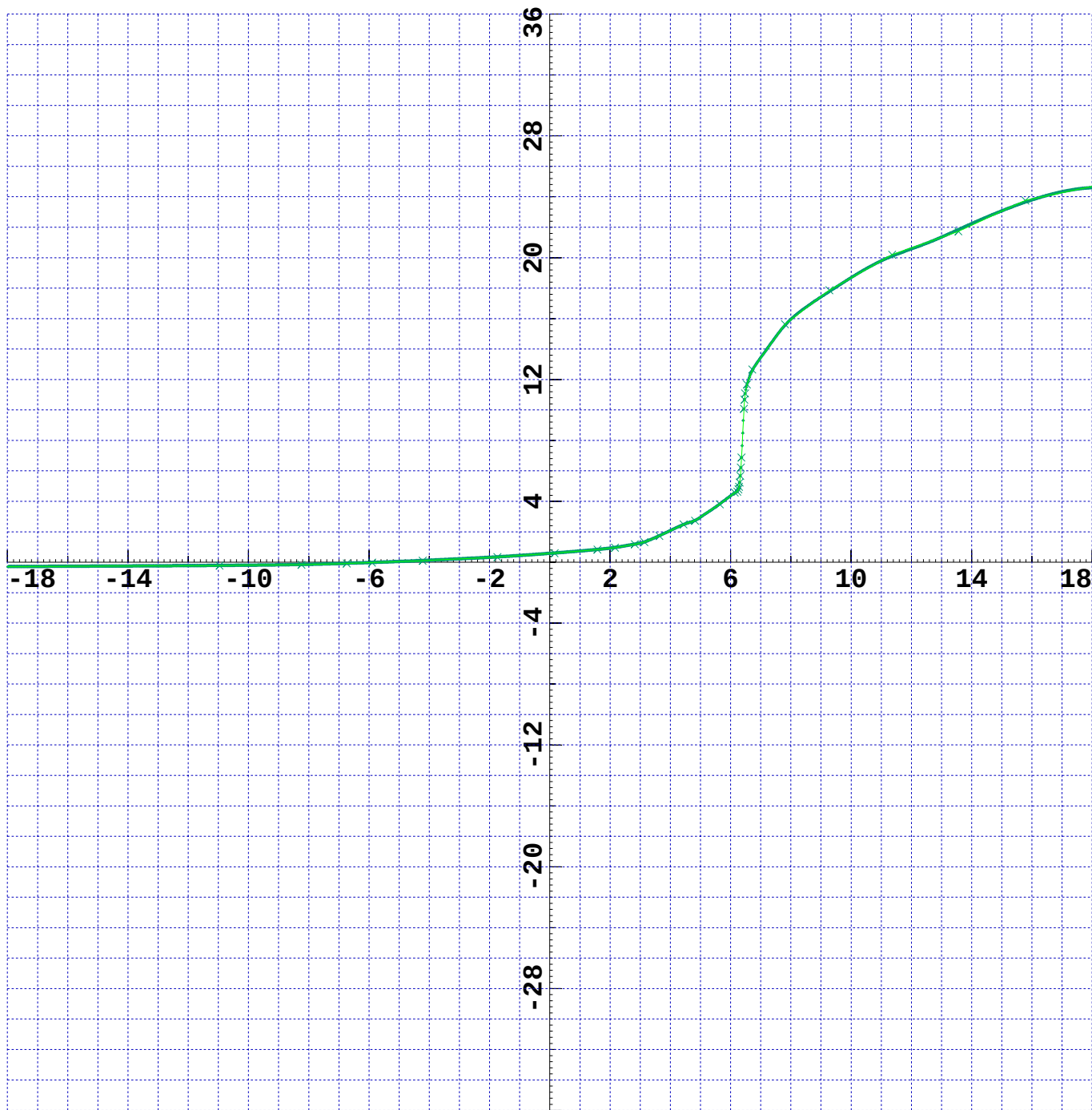
Ident: kpfr\_023



Left wheel: S1002t32.5.wheel    Right wheel: S1002t32.5.wheel  
Left rail: r\_prof/SEC023\_l.short.rail    Right rail: r\_prof/SEC023\_r.short.rail  
wprof\_lat\_shift= 0    Gauge= 1425-1441

ZWr

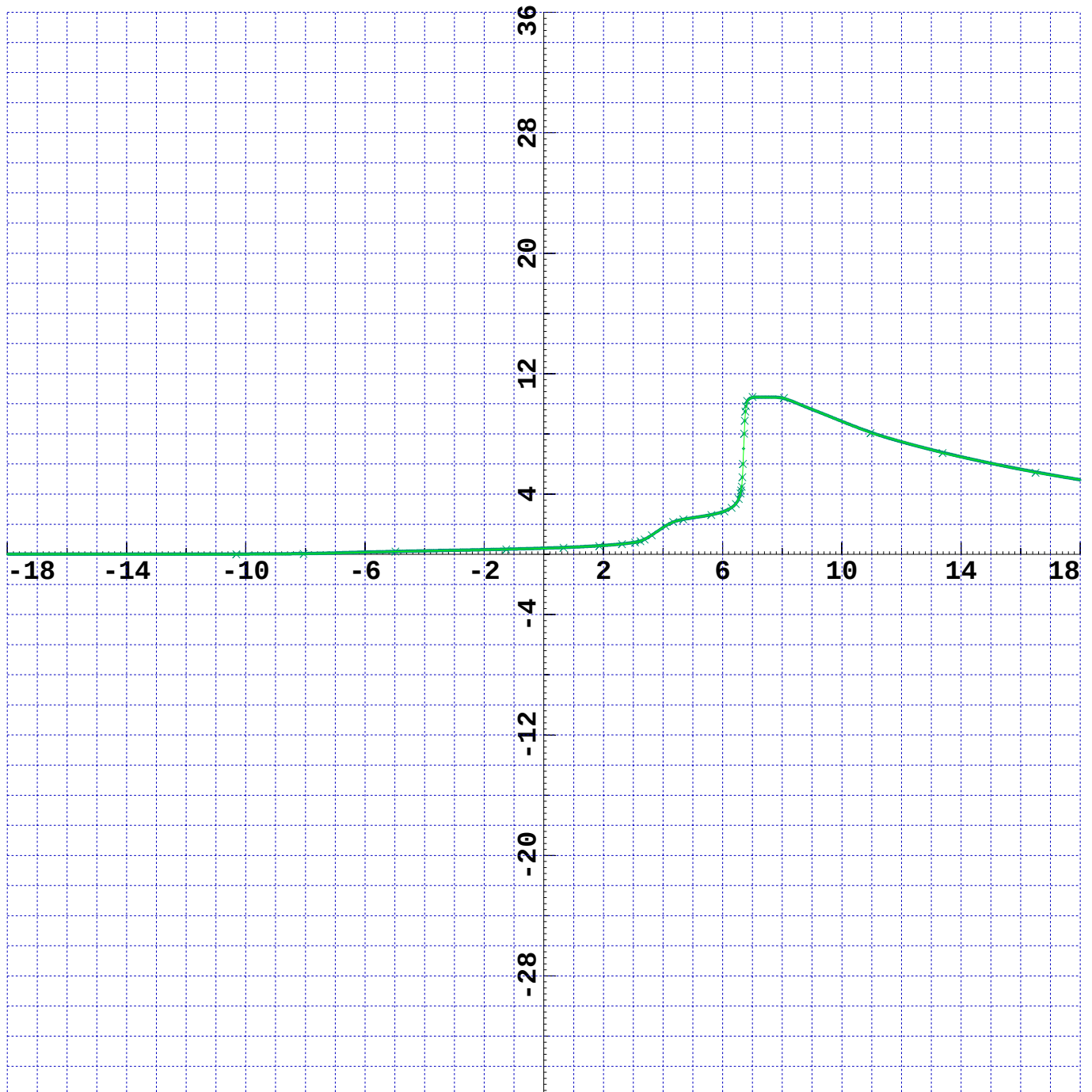
Ident: kpfr\_023



Left wheel: S1002t32.5.wheel    Right wheel: S1002t32.5.wheel  
Left rail: r\_prof/SEC023\_l.short.rail    Right rail: r\_prof/SEC023\_r.short.rail  
wprof\_lat\_shift= 0    Gauge= 1425-1441

ZW1

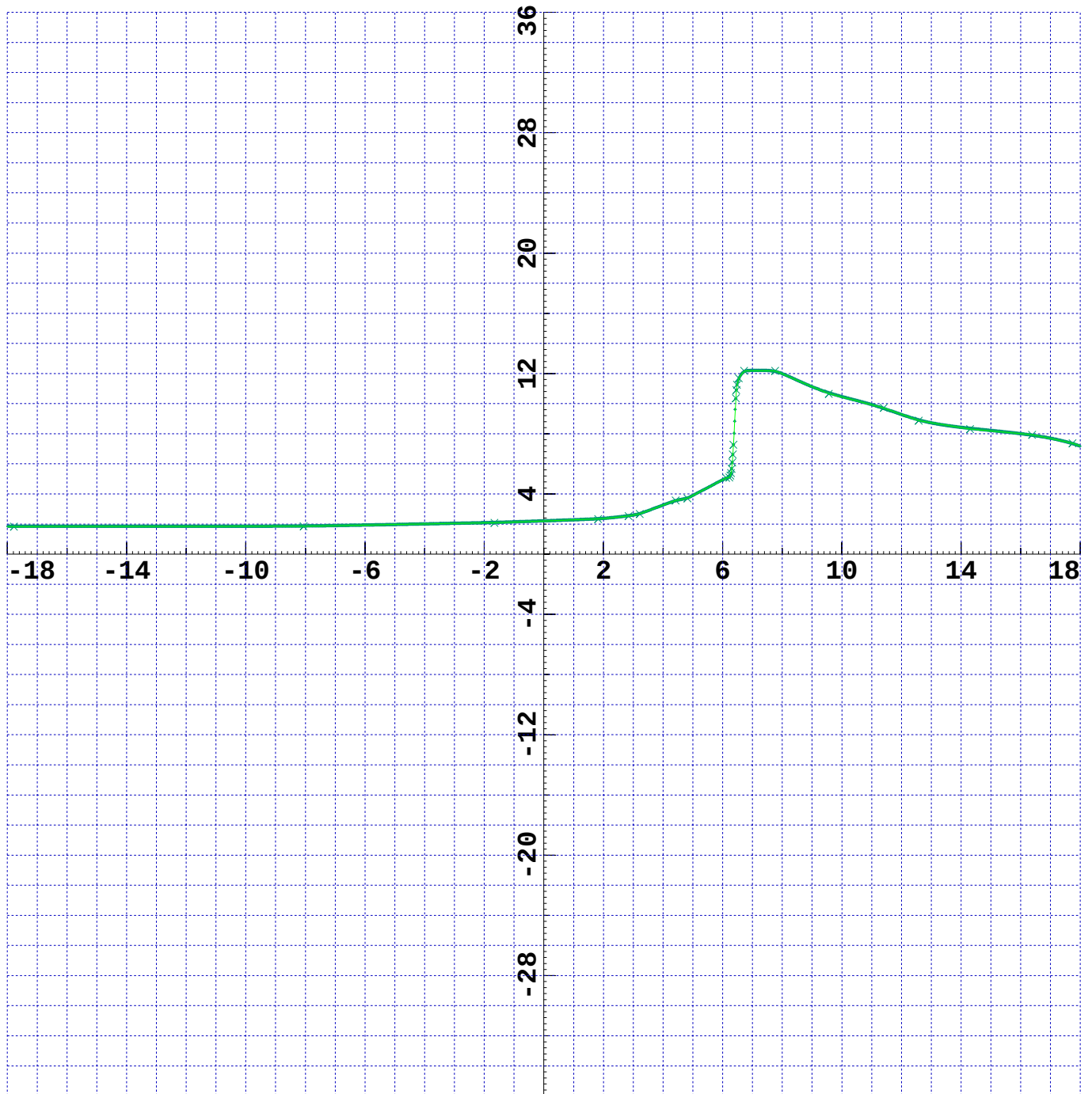
Ident: kpfr\_023



Left wheel: S1002t32.5.wheel    Right wheel: S1002t32.5.wheel  
Left rail: r\_prof/SEC023\_l.short.rail    Right rail: r\_prof/SEC023\_r.short.rail  
wprof\_lat\_shift= 0    Gauge= 1425-1441

ZRr

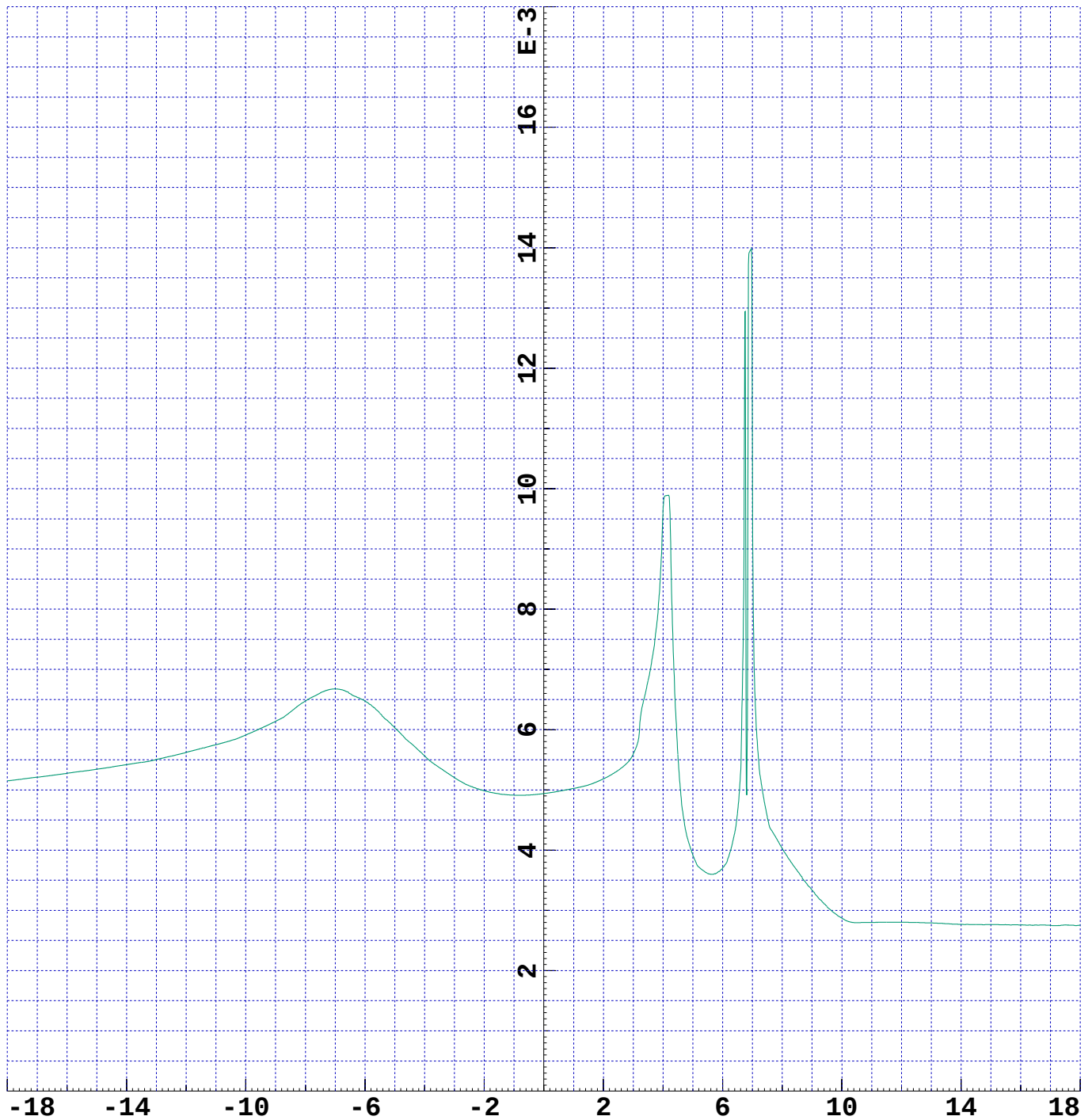
Ident: kpfr\_023



Left wheel: S1002t32.5.wheel    Right wheel: S1002t32.5.wheel  
Left rail: r\_prof/SEC023\_l.short.rail    Right rail: r\_prof/SEC023\_r.short.rail  
wprof\_lat\_shift= 0    Gauge= 1425-1441

ZR1

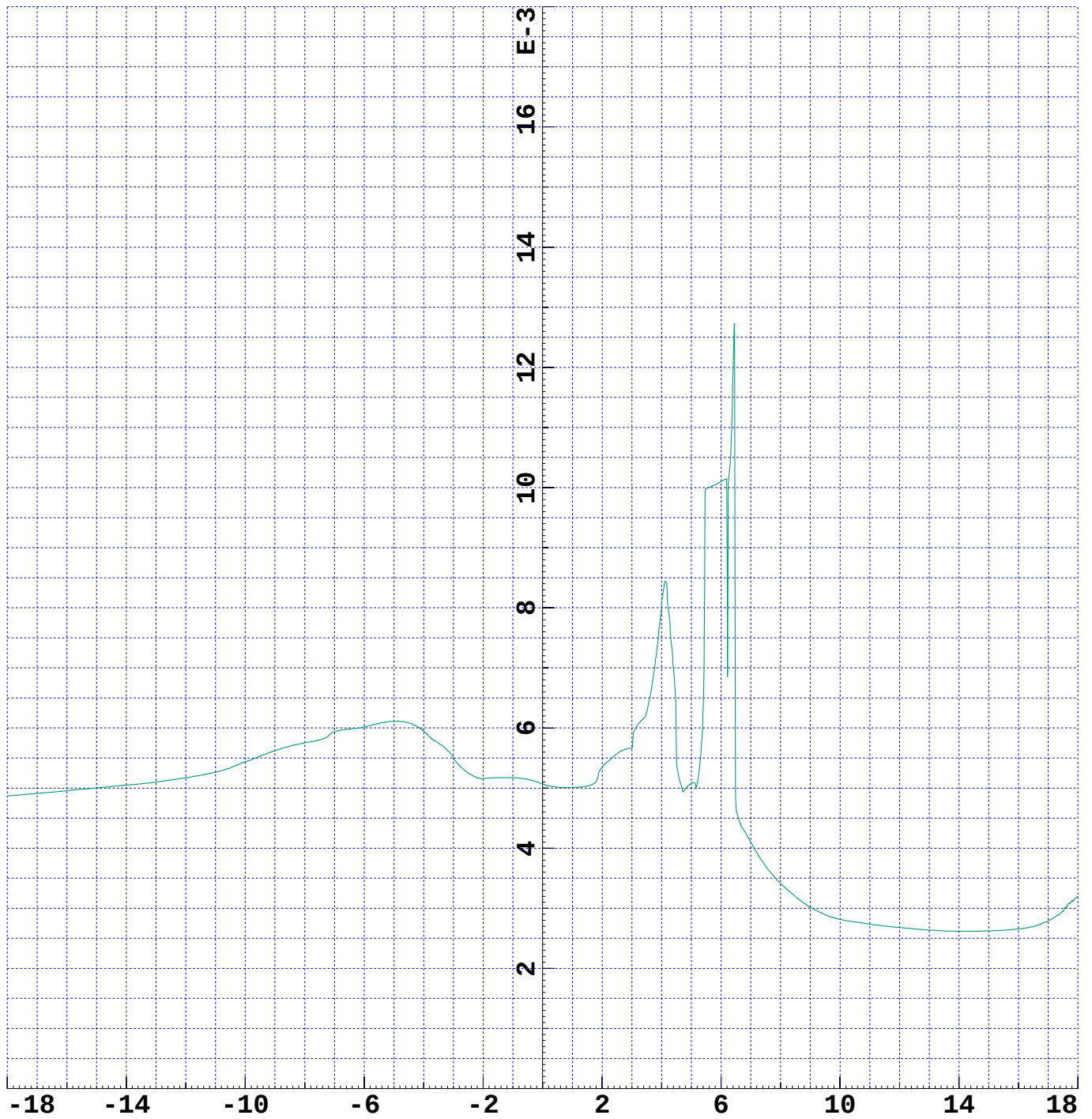
Ident: kpfr\_023



Left wheel: S1002t32.5.wheel    Right wheel: S1002t32.5.wheel  
Left rail: r\_prof/SEC023\_l.short.rail    Right rail: r\_prof/SEC023\_r.short.rail  
wprof\_lat\_shift= 0    Gauge= 1425-1441

C\_r

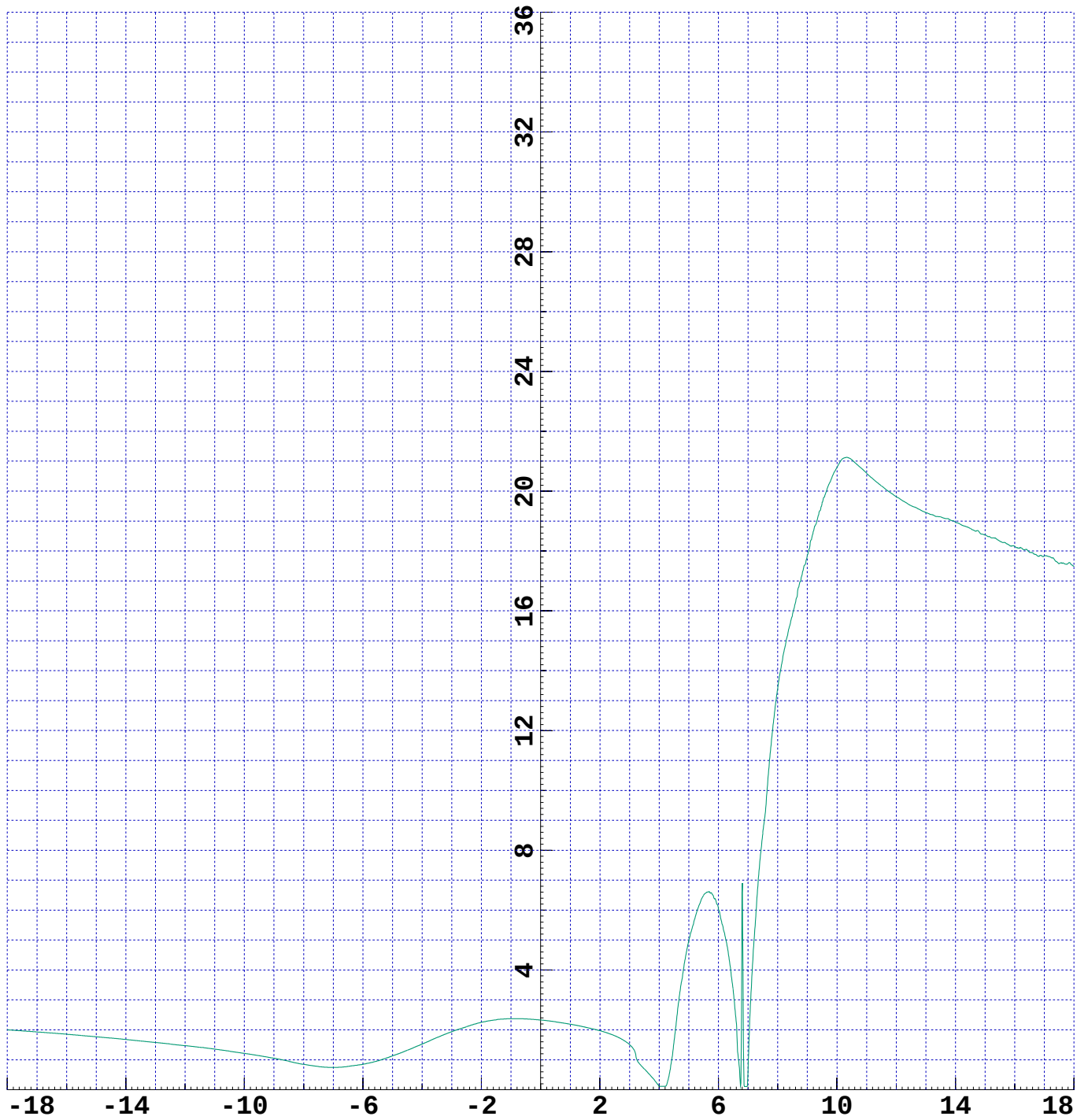
Ident: kpfr\_023



Left wheel: S1002t32.5.wheel    Right wheel: S1002t32.5.wheel  
Left rail: r\_prof/SEC023\_l.short.rail    Right rail: r\_prof/SEC023\_r.short.rail  
wprof\_lat\_shift= 0    Gauge= 1425-1441

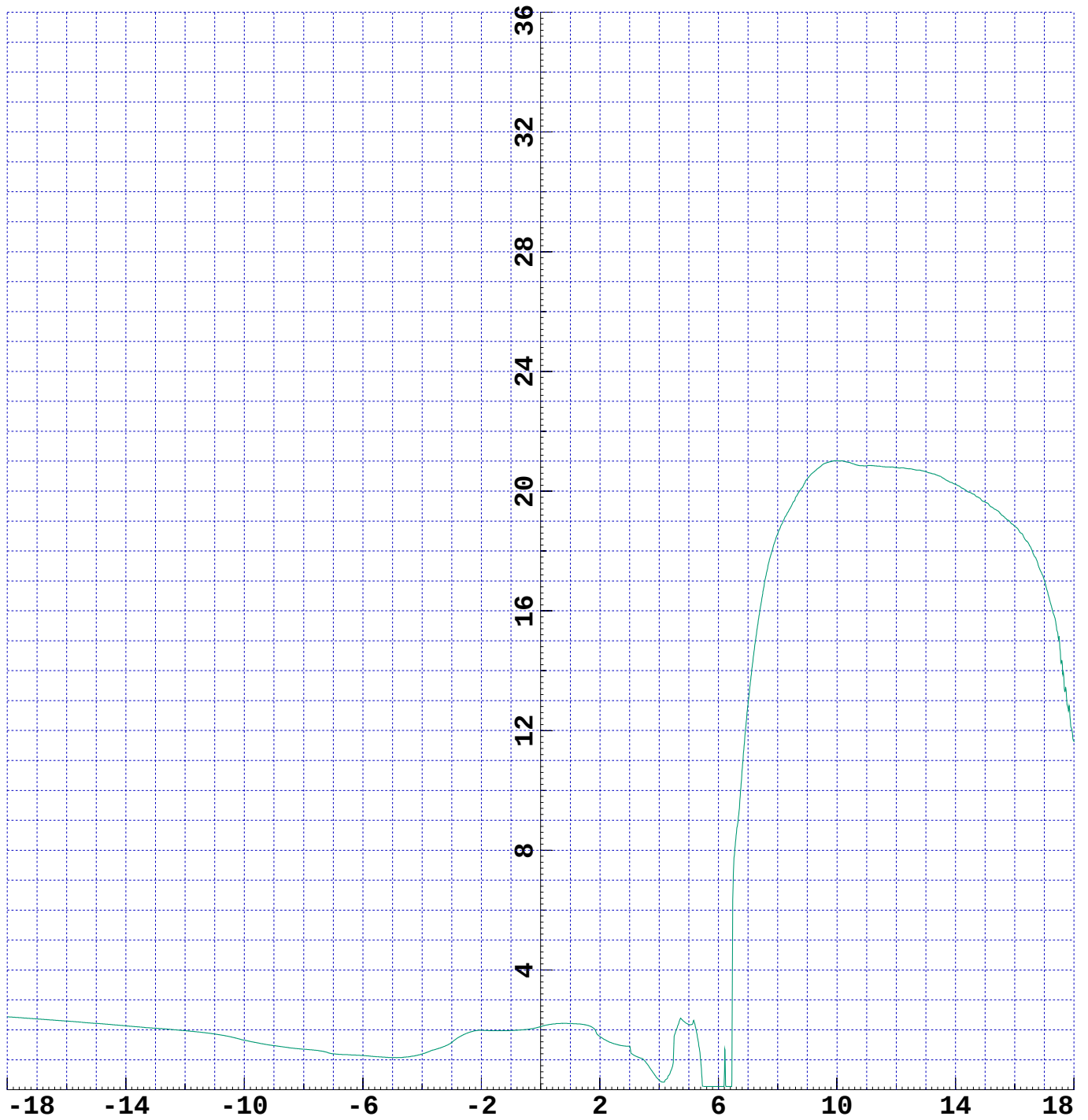
C\_1

Ident: kpfr\_023



Left wheel: S1002t32.5.wheel    Right wheel: S1002t32.5.wheel    A/B\_r  
Left rail: r\_prof/SEC023\_l.short.rail    Right rail: r\_prof/SEC023\_r.short.rail  
wprof\_lat\_shift= 0    Gauge= 1425-1441

Ident: kpfr\_023



Left wheel: S1002t32.5.wheel    Right wheel: S1002t32.5.wheel  
Left rail: r\_prof/SEC023\_l.short.rail    Right rail: r\_prof/SEC023\_r.short.rail  
wprof\_lat\_shift= 0    Gauge= 1425-1441

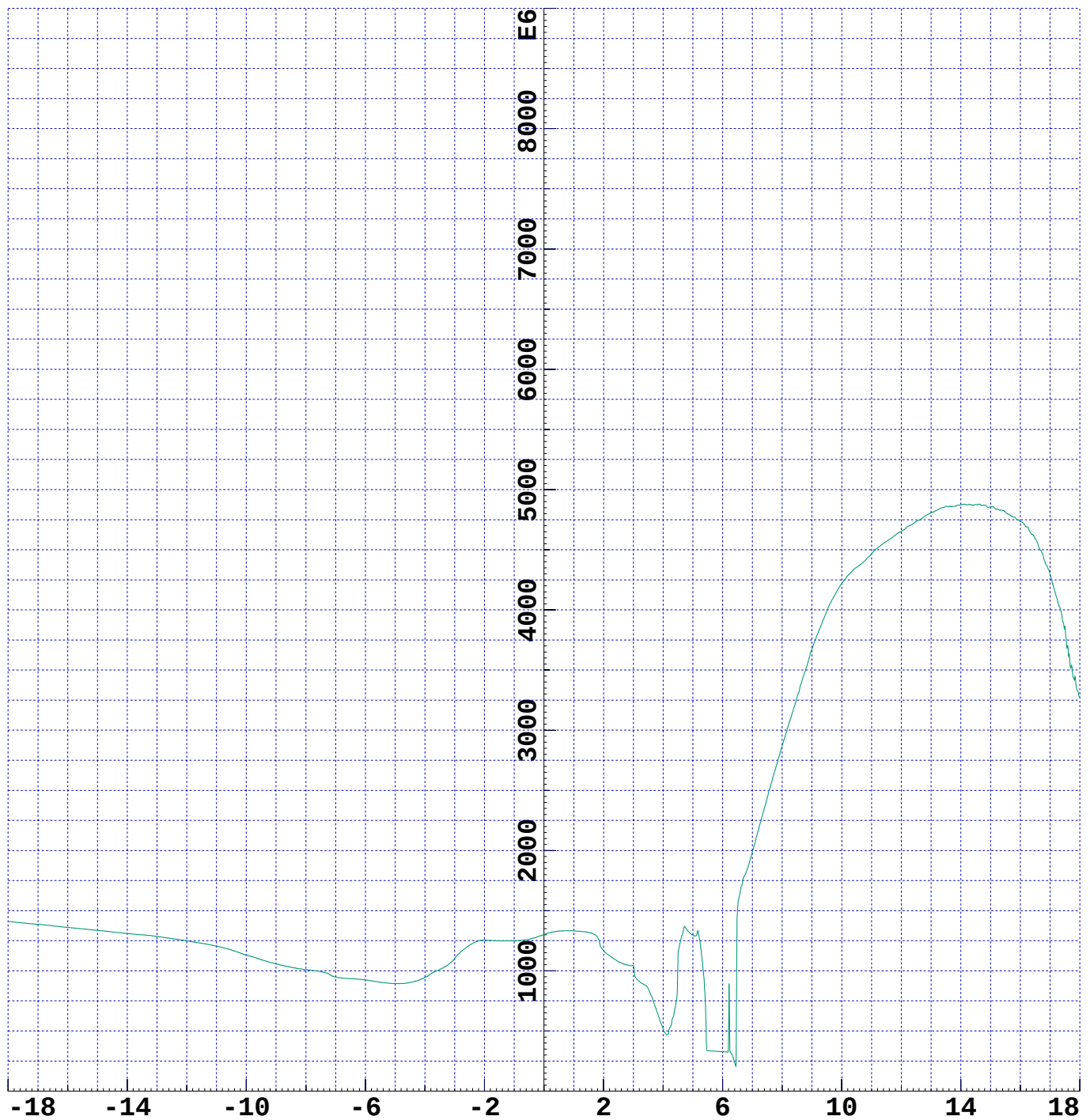
A/B\_1

Ident: kpfr\_023



Left wheel: S1002t32.5.wheel    Right wheel: S1002t32.5.wheel    SIGMAR  
Left rail: r\_prof/SEC023\_l.short.rail    Right rail: r\_prof/SEC023\_r.short.rail  
Wprof\_lat\_shift= 0    Gauge= 1425-1441

Ident: kpfr\_023



Left wheel: S1002t32.5.wheel    Right wheel: S1002t32.5.wheel    **SIGMA1**  
Left rail: r\_prof/SEC023\_l.short.rail    Right rail: r\_prof/SEC023\_r.short.rail  
wprof\_lat\_shift= 0    Gauge= 1425-1441

Ident: kpfr\_023

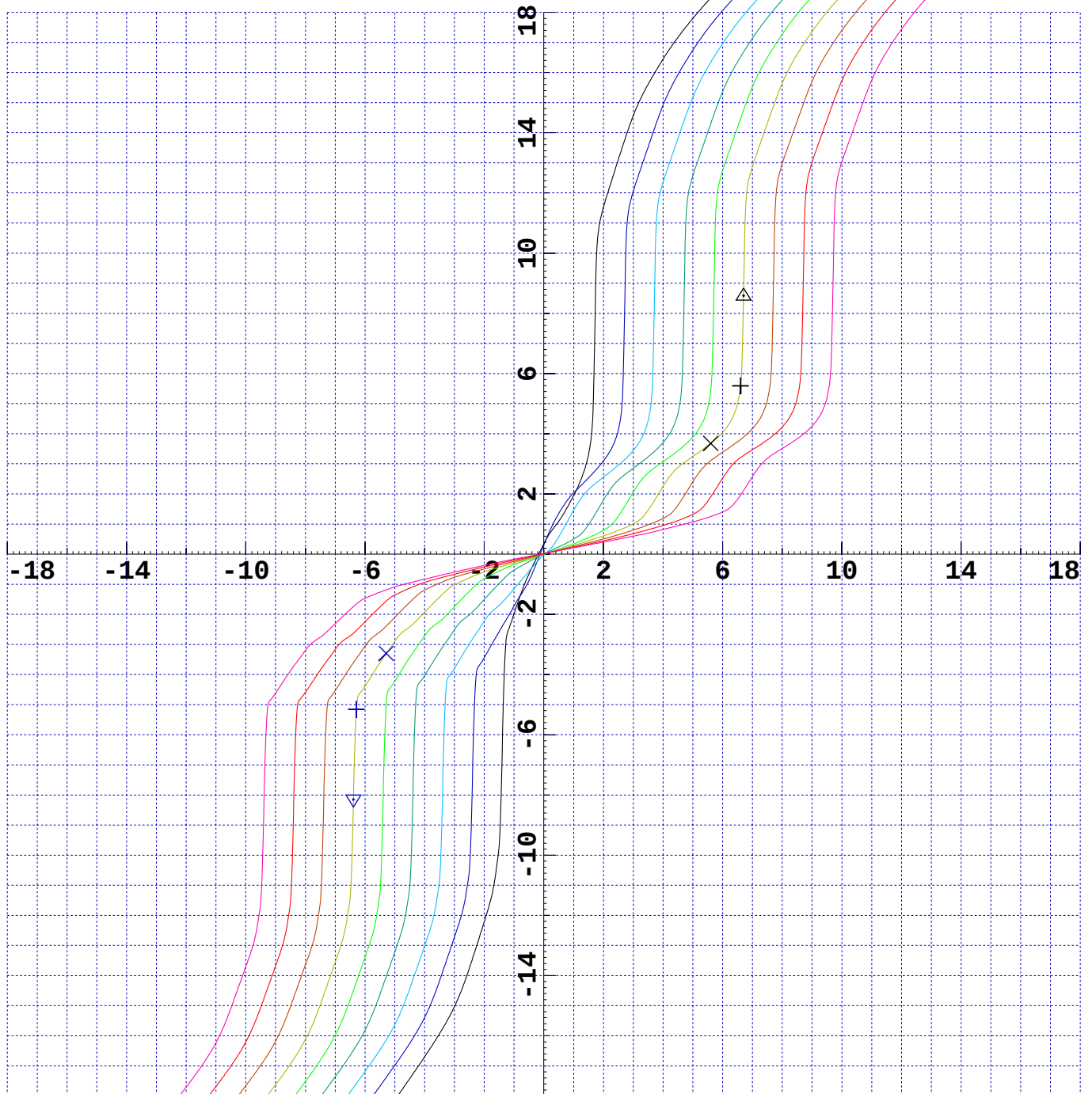
Gauge= 1425 —  
 1427 —  
 1429 —  
 1431 —  
 1433 —  
 1435 —  
 1437 —  
 1439 —  
 1441 —

## Radial Steering Index

× =  $\Delta r_E = 3.68$  left curve  
 × =  $\Delta r_E = 3.30$  right curve  
 + =  $A0r = 6.60$  5.59  
 + =  $A0l = -6.29$  -5.15

possibility of  
rolling without  
slip

discontinuity  
point



△ = 0.1mm right of +discontinuity  
 ▽ = 0.1mm left of -discontinuity

Left wheel: S1002t32.5.wheel Right wheel: S1002t32.5.wheel

Left rail: r\_prof/SEC023\_l.short.rail Right rail: r\_prof/SEC023\_r.short.rail

Wprof\_lat\_shift= 0 Gauge= 1425-1441

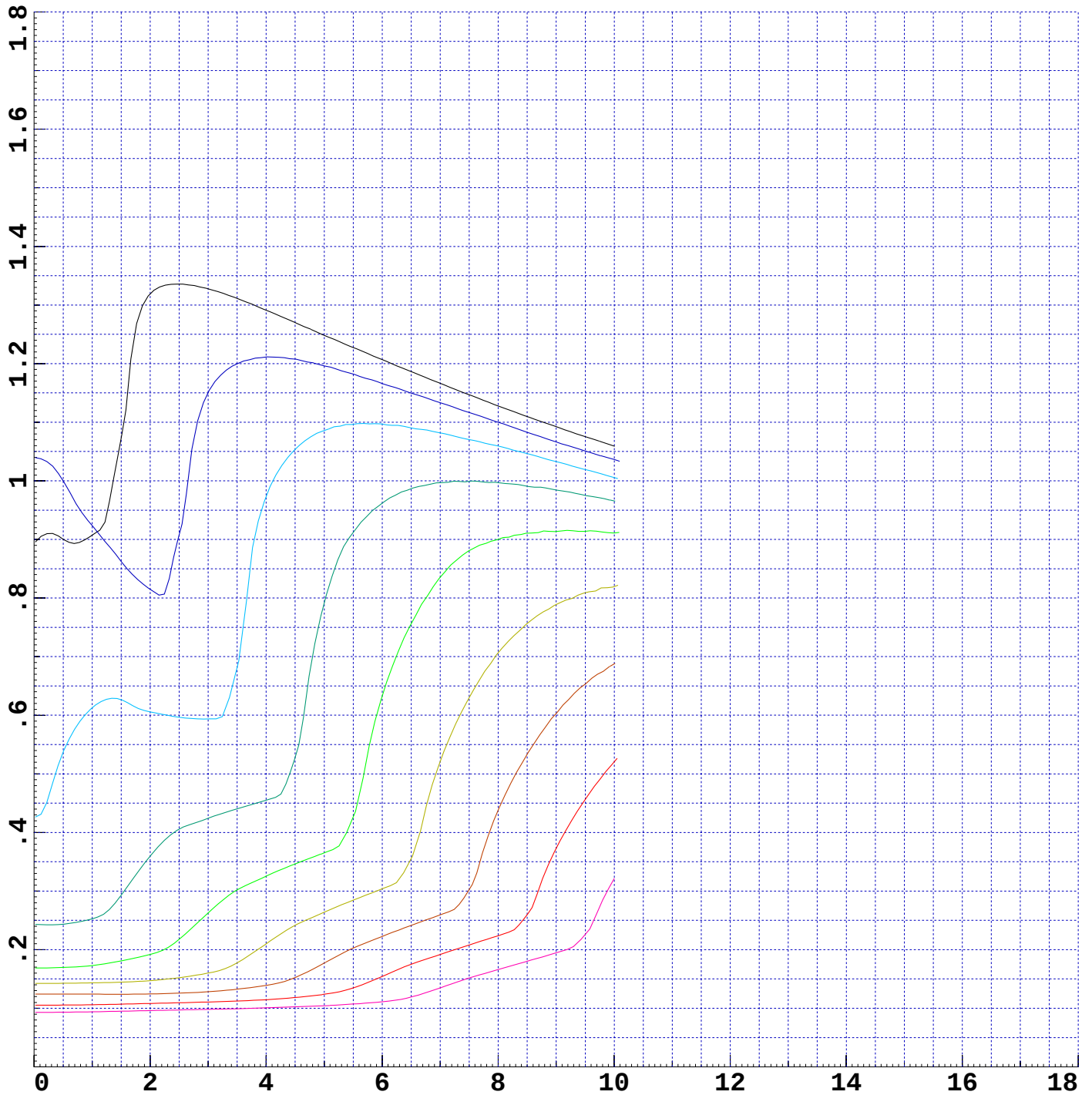
rr-rl

Ident: kpfr\_023

# GENSYS-KPF.1308

Delta\_Y=

|             |   | .1    | .5    | 2     | 3     | 4     | 6     |
|-------------|---|-------|-------|-------|-------|-------|-------|
| Gauge= 1425 | — | .903  | .900  | 1.319 | 1.327 | 1.291 | 1.207 |
| 1427        | — | 1.038 | 1.000 | .815  | 1.151 | 1.211 | 1.166 |
| 1429        | — | .430  | .537  | .606  | .594  | .973  | 1.097 |
| 1431        | — | .243  | .244  | .360  | .424  | .455  | .962  |
| 1433        | — | .169  | .169  | .192  | .263  | .325  | .633  |
| 1435        | — | .142  | .143  | .147  | .160  | .210  | .304  |
| 1437        | — | .124  | .124  | .124  | .128  | .139  | .223  |
| 1439        | — | .105  | .106  | .108  | .111  | .115  | .154  |
| 1441        | — | .093  | .093  | .096  | .098  | .101  | .111  |



Left wheel: S1002t32.5.wheel Right wheel: S1002t32.5.wheel

Left rail: r\_prof/SEC023\_l.short.rail Right rail: r\_prof/SEC023\_r.short.rail

wprof\_lat\_shift= 0 Gauge= 1425-1441

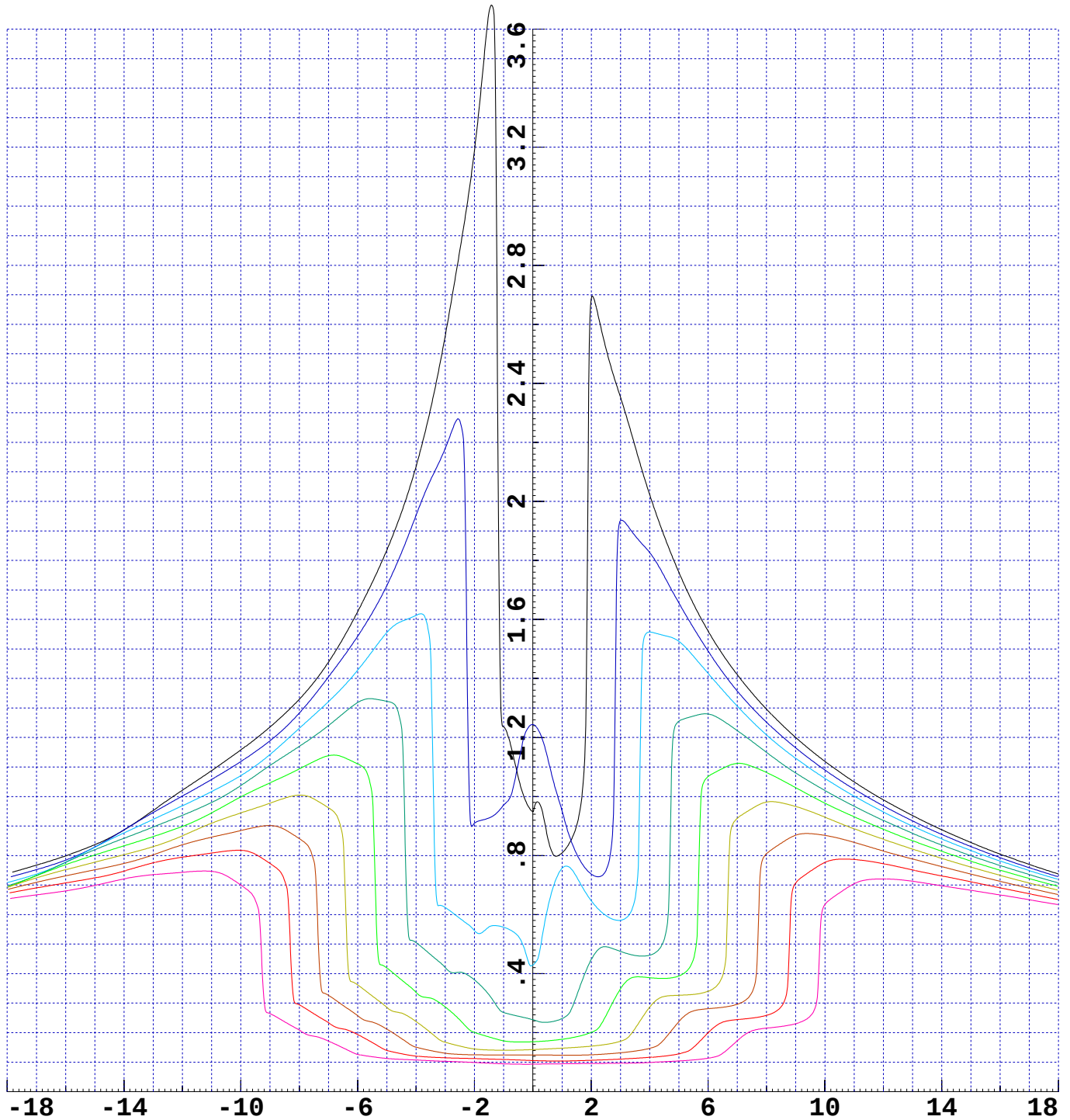
UIC519

Ident: kpfr\_023

# GENSYS-KPF.1308

Delta\_Y=

|        |      | .1    | .5    | 2     | 3     | 4     | 6     |
|--------|------|-------|-------|-------|-------|-------|-------|
| Gauge= | 1425 | .978  | .862  | 2.689 | 2.352 | 2.022 | 1.561 |
|        | 1427 | 1.237 | 1.132 | .737  | 1.935 | 1.826 | 1.493 |
|        | 1429 | .440  | .621  | .646  | .581  | 1.557 | 1.417 |
|        | 1431 | .241  | .235  | .448  | .475  | .462  | 1.280 |
|        | 1433 | .169  | .172  | .201  | .349  | .386  | 1.068 |
|        | 1435 | .143  | .145  | .154  | .171  | .287  | .340  |
|        | 1437 | .124  | .124  | .125  | .132  | .147  | .281  |
|        | 1439 | .105  | .104  | .106  | .110  | .116  | .200  |
|        | 1441 | .093  | .094  | .095  | .096  | .099  | .114  |



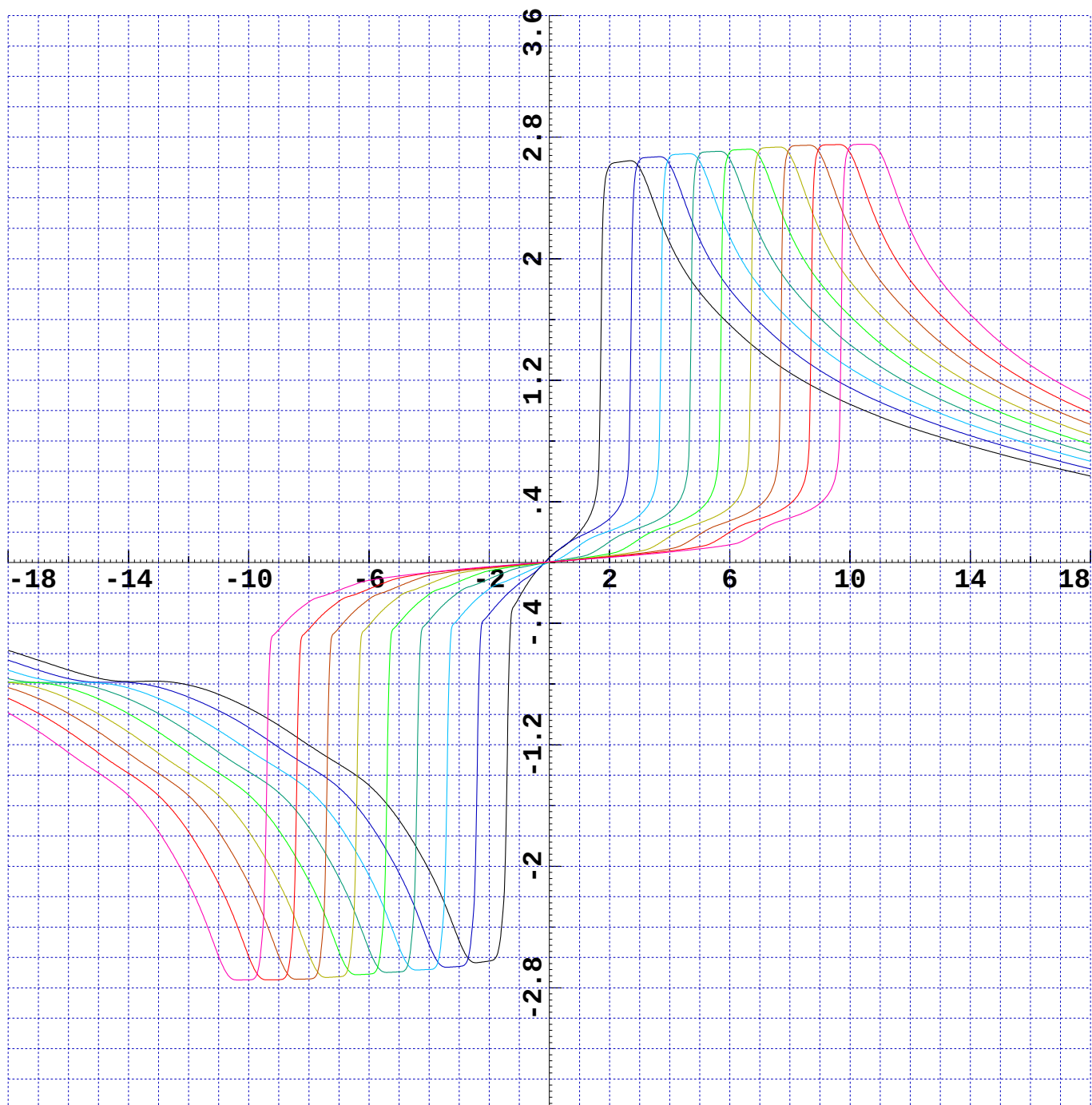
Left wheel: S1002t32.5.wheel Right wheel: S1002t32.5.wheel  
 Left rail: r\_prof/SEC023\_l.short.rail Right rail: r\_prof/SEC023\_r.short.rail  
 wprof\_lat\_shift= 0 Gauge= 1425-1441

lambda

Ident: kpfr\_023

# GENSYS - KPF . 1308

Gauge= 1425 —  
 1427 —  
 1429 —  
 1431 —  
 1433 —  
 1435 —  
 1437 —  
 1439 —  
 1441 —



Left wheel: S1002t32.5.wheel Right wheel: S1002t32.5.wheel  $\tan\_Ga$   
 Left rail:  $r\_prof/SEC023\_l.short.rail$  Right rail:  $r\_prof/SEC023\_r.short.rail$   
 Wprof\_lat\_shift= 0 Gauge= 1425-1441

Ident: kpfr\_023

# GENSYS-KPF.1308

Delta\_Y=

.1

.5

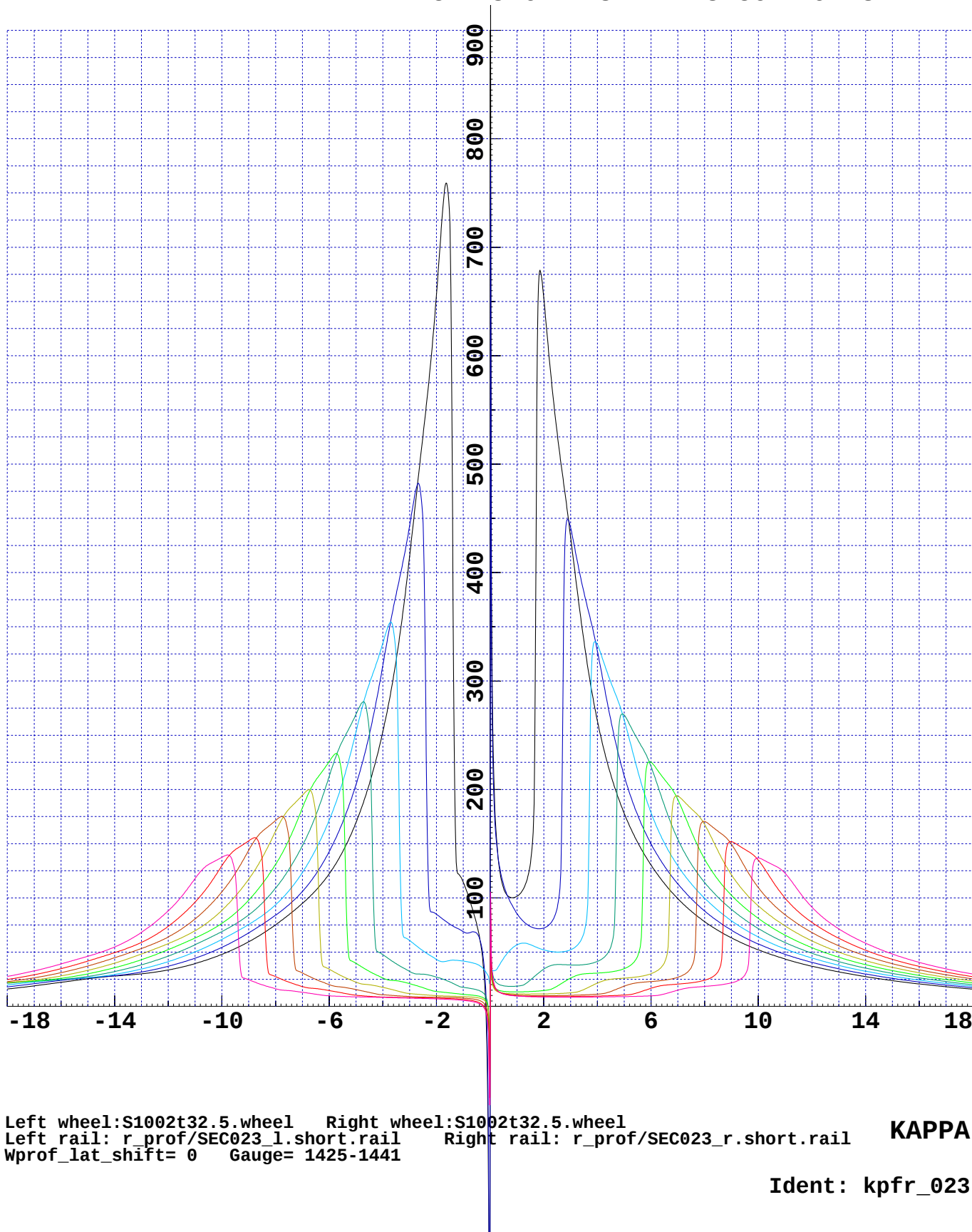
2

3

4

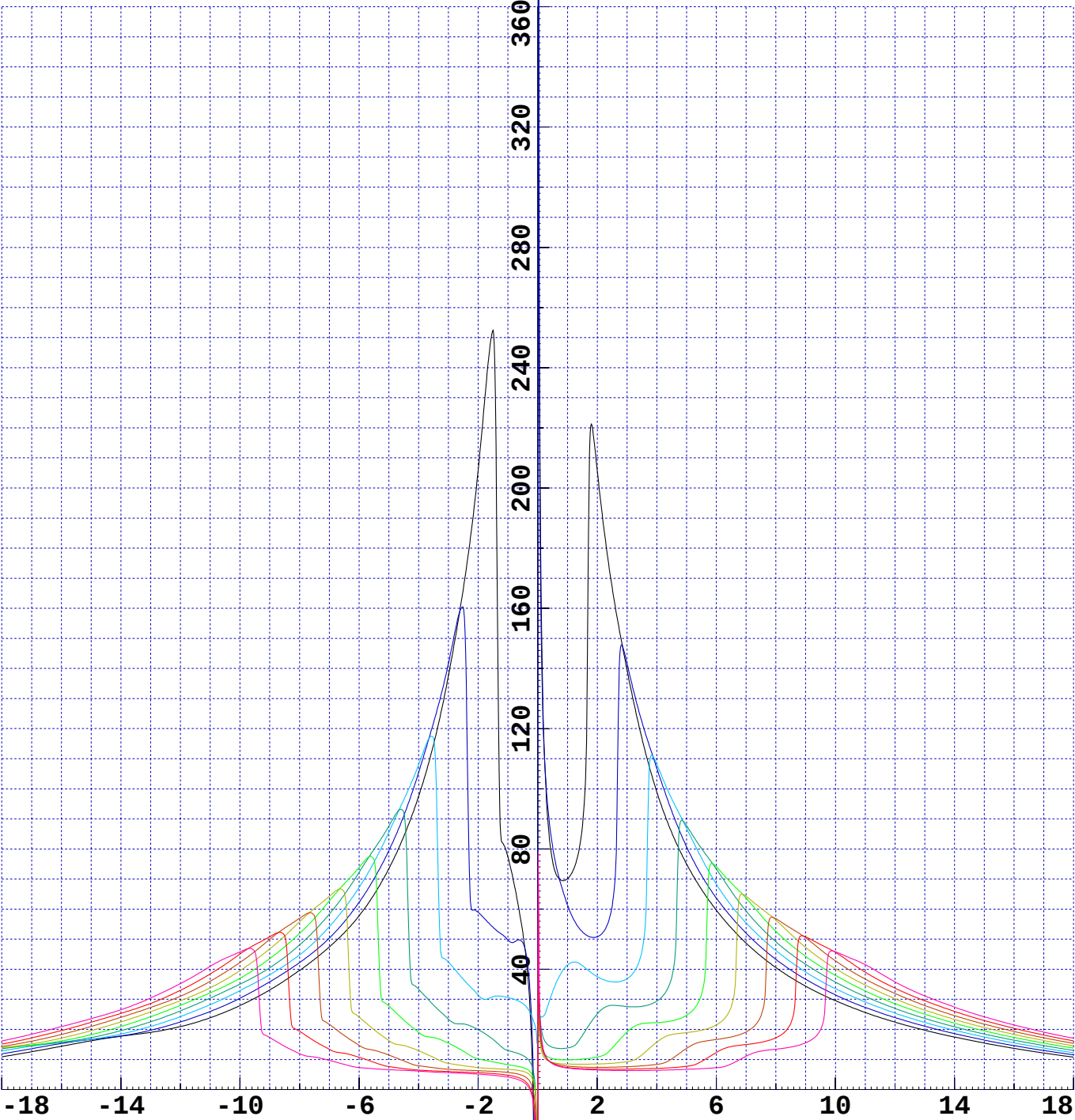
6

|        |      |   |        |        |        |        |        |        |
|--------|------|---|--------|--------|--------|--------|--------|--------|
| Gauge= | 1425 | — | 260.60 | 109.18 | 652.98 | 432.68 | 263.06 | 130.33 |
|        | 1427 | — | 233.40 | 112.70 | 72.21  | 441.47 | 327.52 | 149.83 |
|        | 1429 | — | 32.89  | 44.05  | 52.02  | 52.15  | 333.71 | 178.49 |
|        | 1431 | — | 29.65  | 18.97  | 34.34  | 38.15  | 41.48  | 221.21 |
|        | 1433 | — | 21.38  | 13.89  | 14.53  | 26.06  | 30.69  | 225.12 |
|        | 1435 | — | 19.36  | 12.10  | 11.40  | 12.46  | 21.46  | 30.13  |
|        | 1437 | — | 23.04  | 11.83  | 9.85   | 10.17  | 11.23  | 22.91  |
|        | 1439 | — | 26.32  | 11.54  | 9.05   | 9.08   | 9.41   | 16.72  |
|        | 1441 | — | 27.11  | 11.45  | 8.64   | 8.42   | 8.59   | 9.73   |



GENSYS-KPF.1308

|          |      |        |       |        |        |        |       |
|----------|------|--------|-------|--------|--------|--------|-------|
| Delta_Y= |      | .1     | .5    | 2      | 3      | 4      | 6     |
| Gauge=   | 1425 | 181.59 | 75.99 | 205.60 | 139.40 | 98.95  | 59.63 |
|          | 1427 | 168.11 | 80.95 | 50.83  | 141.64 | 106.79 | 63.68 |
|          | 1429 | 24.29  | 32.46 | 37.52  | 36.87  | 108.17 | 68.30 |
|          | 1431 | 22.01  | 14.08 | 25.18  | 27.60  | 29.42  | 73.33 |
|          | 1433 | 15.91  | 10.33 | 10.80  | 19.15  | 22.26  | 74.09 |
|          | 1435 | 14.43  | 9.02  | 8.50   | 9.27   | 15.80  | 21.47 |
|          | 1437 | 17.20  | 8.83  | 7.35   | 7.58   | 8.37   | 16.67 |
|          | 1439 | 19.67  | 8.63  | 6.76   | 6.78   | 7.03   | 12.34 |
|          | 1441 | 20.28  | 8.56  | 6.46   | 6.30   | 6.42   | 7.26  |



Left wheel: S1002t32.5.wheel    Right wheel: S1002t32.5.wheel  
Left rail: r\_prof/SEC023\_l.short.rail    Right rail: r\_prof/SEC023\_r.short.rail  
wprof\_lat\_shift= 0    Gauge= 1425-1441

EPS

Ident: kpfr\_023

GENSYS-KPF.1308

|          |      |       |      |      |      |      |      |
|----------|------|-------|------|------|------|------|------|
| Delta_Y= |      | .1    | .5   | 2    | 3    | 4    | 6    |
| Gauge=   | 1425 | 12.90 | 2.89 | 1.28 | 1.51 | 1.56 | 1.48 |
|          | 1427 | 12.52 | 2.74 | .91  | .90  | 1.16 | 1.29 |
|          | 1429 | 12.34 | 2.60 | .83  | .65  | .70  | 1.07 |
|          | 1431 | 12.30 | 2.57 | .76  | .59  | .51  | .80  |
|          | 1433 | 12.27 | 2.55 | .73  | .54  | .46  | .49  |
|          | 1435 | 12.24 | 2.53 | .71  | .51  | .42  | .36  |
|          | 1437 | 12.22 | 2.52 | .70  | .50  | .40  | .32  |
|          | 1439 | 12.18 | 2.50 | .69  | .49  | .39  | .29  |
|          | 1441 | 12.15 | 2.49 | .68  | .47  | .37  | .27  |

