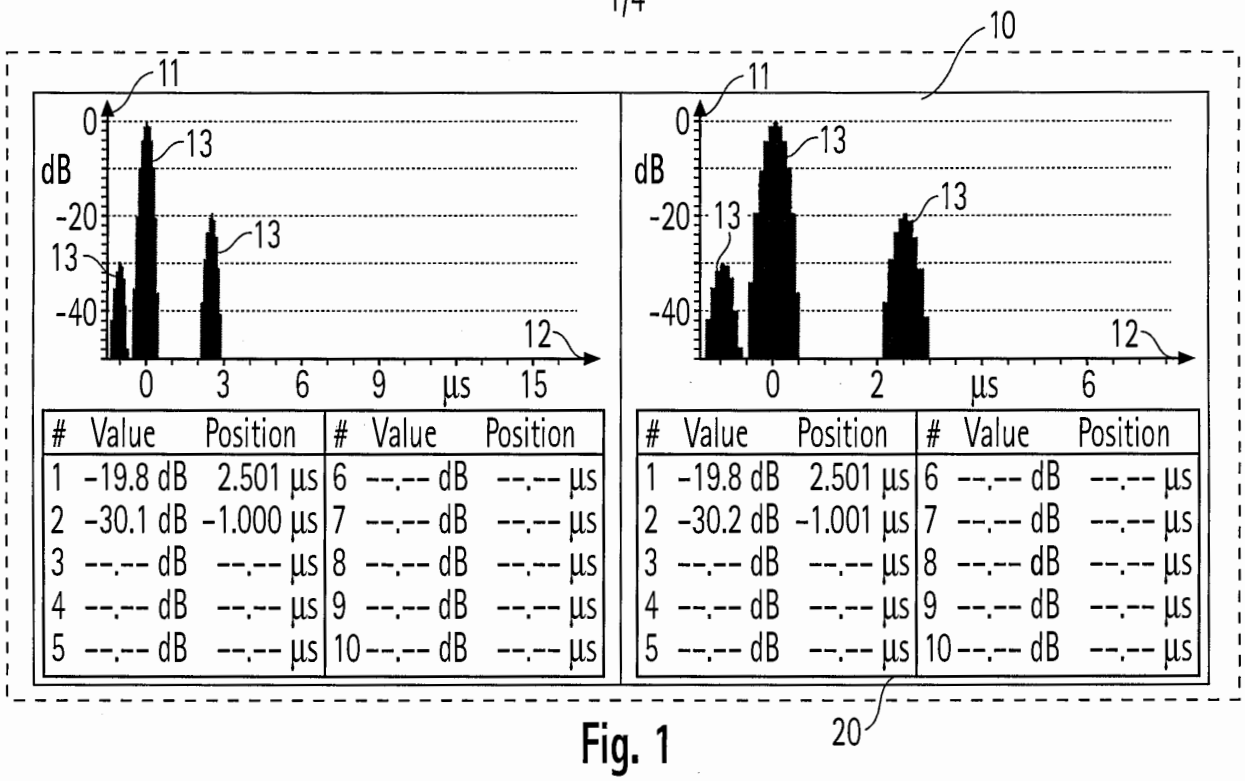


#	Value	Position	#	Value	Position
1	-19.8 dB	2.501 µs	6	--.-- dB	--.-- µs
2	-30.1 dB	-1.000 µs	7	--.-- dB	--.-- µs
3	--.-- dB	--.-- µs	8	--.-- dB	--.-- µs
4	--.-- dB	--.-- µs	9	--.-- dB	--.-- µs
5	--.-- dB	--.-- µs	10	--.-- dB	--.-- µs

#	Value	Position	#	Value	Position
1	-19.8 dB	2.501 µs	6	--.-- dB	--.-- µs
2	-30.2 dB	-1.001 µs	7	--.-- dB	--.-- µs
3	--.-- dB	--.-- µs	8	--.-- dB	--.-- µs
4	--.-- dB	--.-- µs	9	--.-- dB	--.-- µs
5	--.-- dB	--.-- µs	10	--.-- dB	--.-- µs

Fig. 1

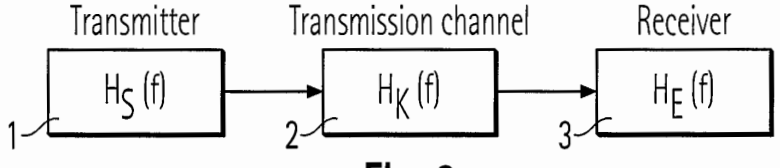


Fig. 2

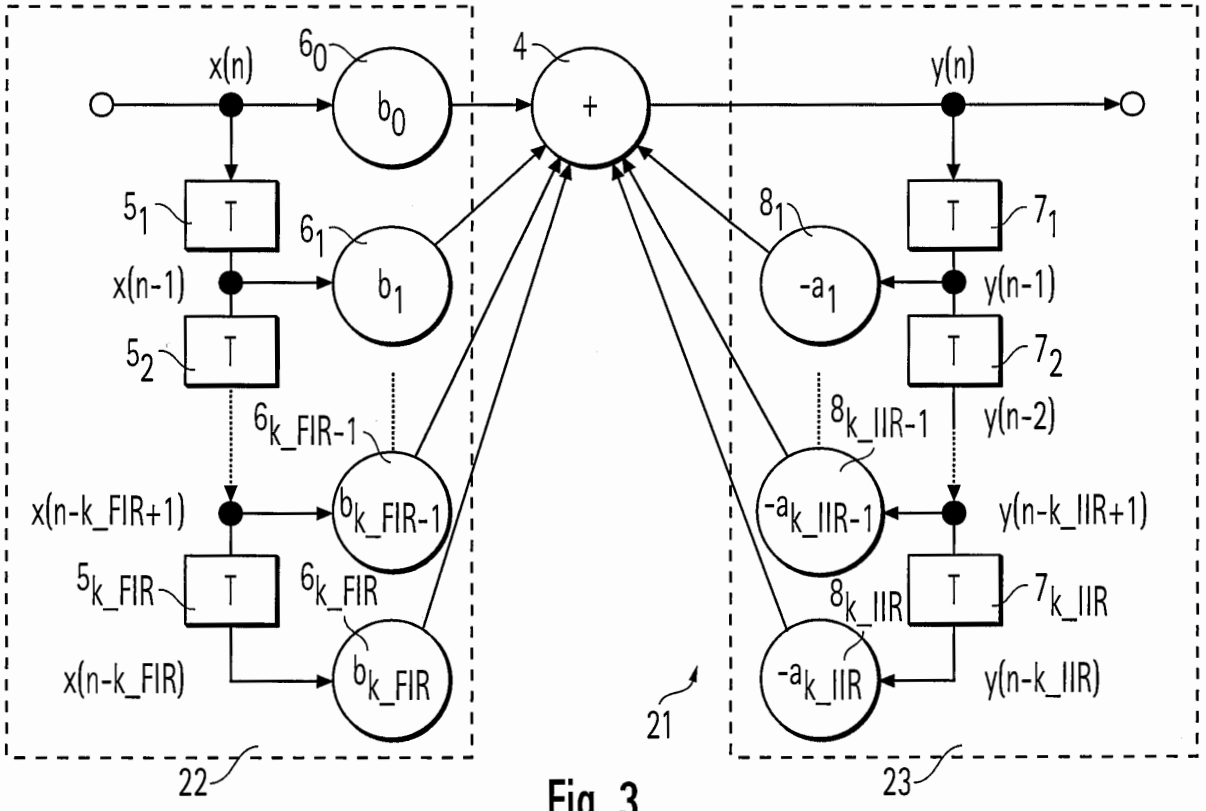


Fig. 3

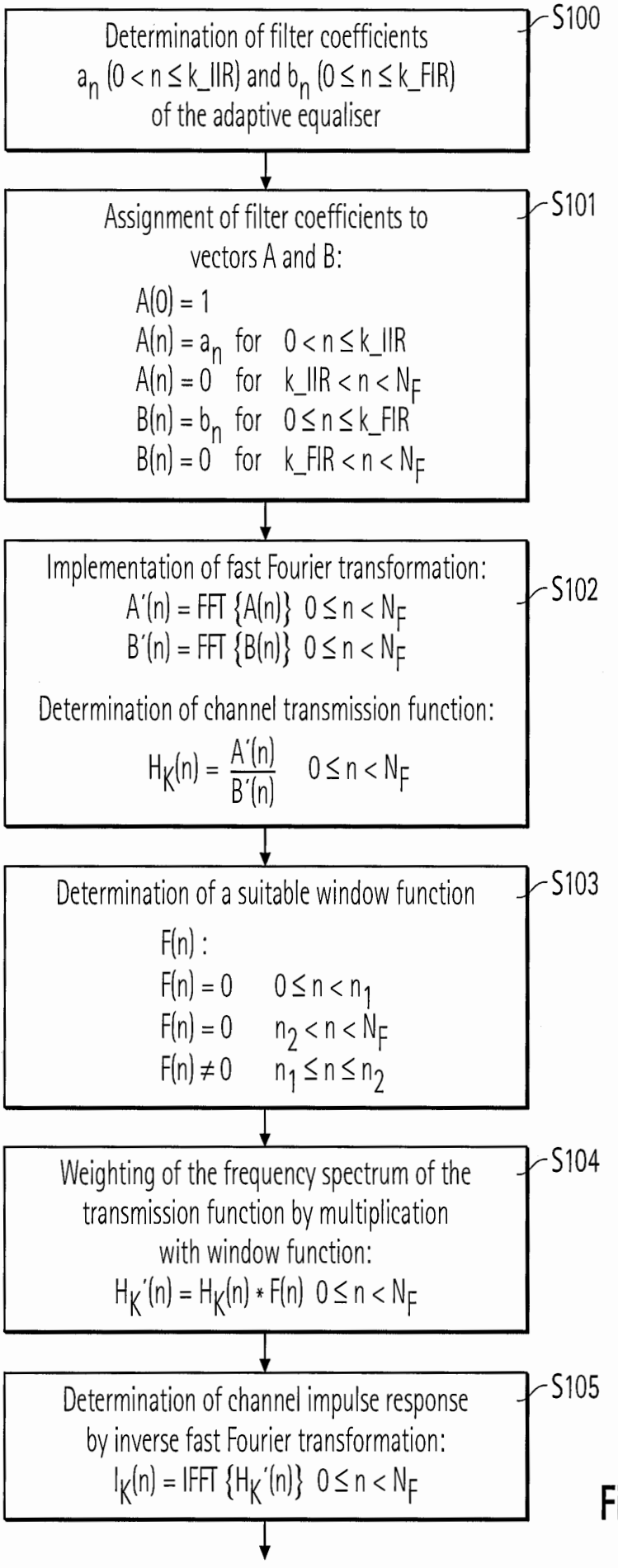

Determination of filter coefficients
a_n (0 < n ≤ k_IIR) and b_n (0 ≤ n ≤ k_FIR)
of the adaptive equaliser
S100
Assignment of filter coefficients to
vectors A and B:
A(0) = 1
A(n) = a_n for 0 < n ≤ k_IIR
A(n) = 0 for k_IIR < n < N_F
B(n) = b_n for 0 ≤ n ≤ k_FIR
B(n) = 0 for k_FIR < n < N_F
S101
Implementation of fast Fourier transformation:
A'(n) = FFT {A(n)} 0 ≤ n < N_F
B'(n) = FFT {B(n)} 0 ≤ n < N_F
Determination of channel transmission function:
$H_K(n) = \frac{A'(n)}{B'(n)}$ 0 ≤ n < N_F
S102
Determination of a suitable window function
F(n) :
F(n) = 0 0 ≤ n < n_1
F(n) = 0 n_2 < n < N_F
F(n) ≠ 0 n_1 ≤ n ≤ n_2
S103
Weighting of the frequency spectrum of the
transmission function by multiplication
with window function:
$H_K'(n) = H_K(n) * F(n)$ 0 ≤ n < N_F
S104
Determination of channel impulse response
by inverse fast Fourier transformation:
$I_K(n)$ = IFFT {$H_K'(n)$} 0 ≤ n < N_F
S105

Fig. 4a

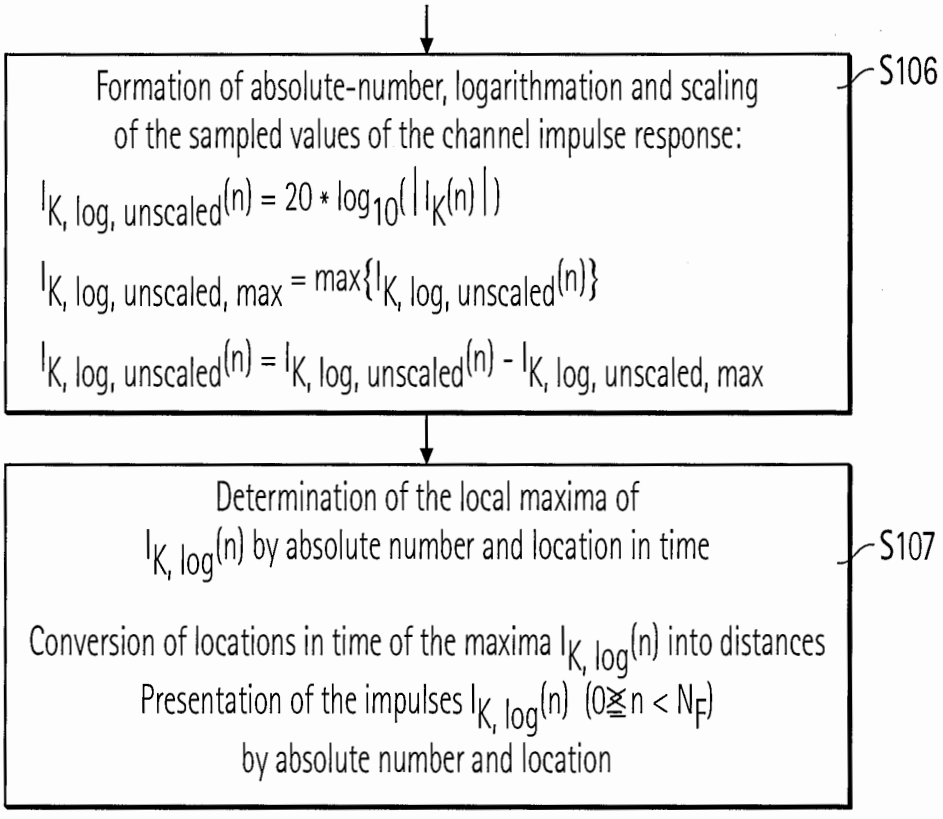

Formation of absolute-number, logarithmation and scaling of the sampled values of the channel impulse response:
$I_{K,\,log,\,unscaled}(n) = 20 * log_{10}(|I_K(n)|)$
$I_{K,\,log,\,unscaled,\,max} = max\{I_{K,\,log,\,unscaled}(n)\}$
$I_{K,\,log,\,unscaled}(n) = I_{K,\,log,\,unscaled}(n) - I_{K,\,log,\,unscaled,\,max}$
S106
Determination of the local maxima of $I_{K,\,log}(n)$ by absolute number and location in time
Conversion of locations in time of the maxima $I_{K,\,log}(n)$ into distances
Presentation of the impulses $I_{K,\,log}(n)$ $(0 \leqq n < N_F)$ by absolute number and location
S107

Fig. 4b

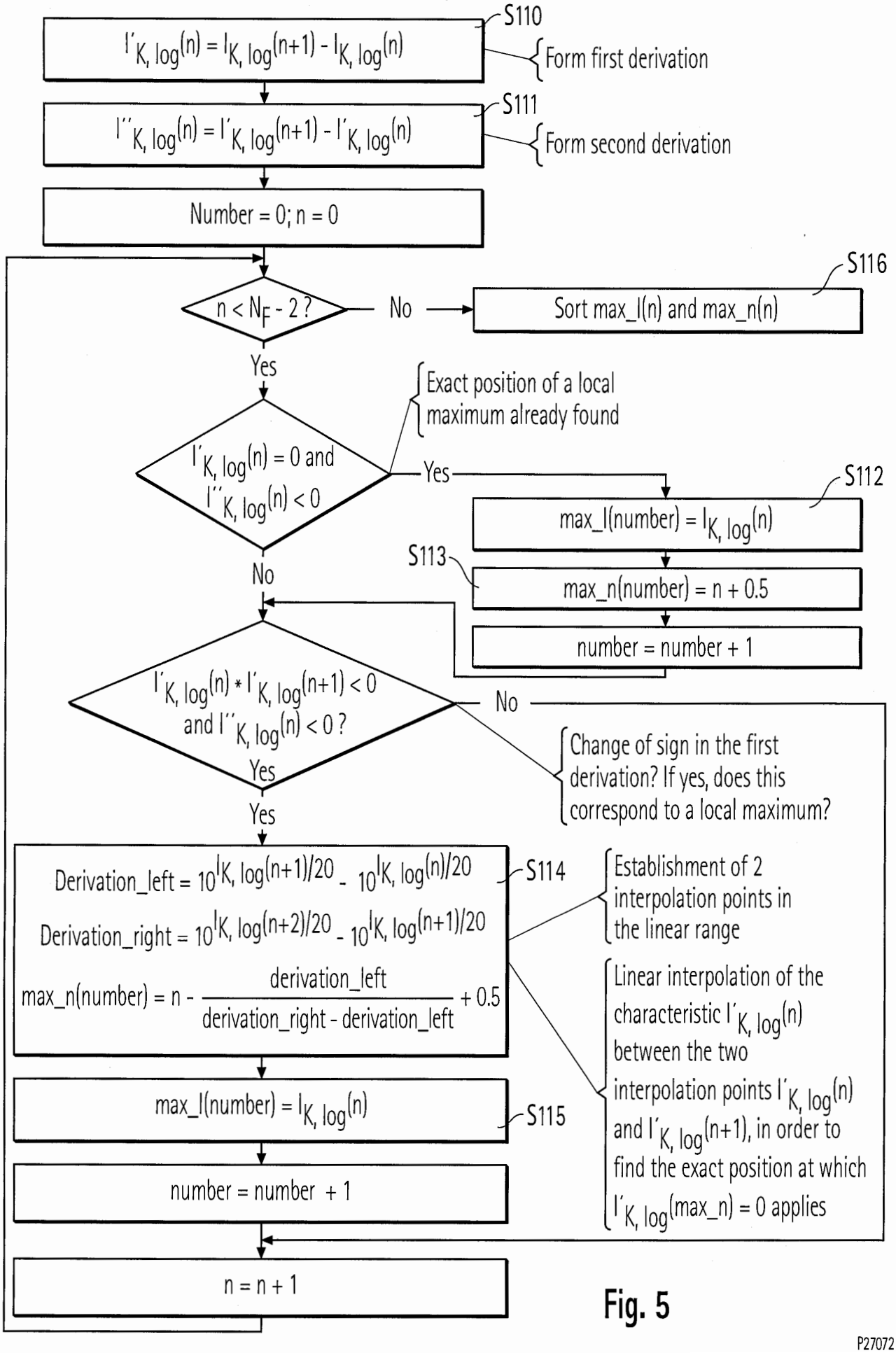

S110
$I'_{K,\log}(n) = I_{K,\log}(n+1) - I_{K,\log}(n)$
Form first derivation
S111
$I''_{K,\log}(n) = I'_{K,\log}(n+1) - I'_{K,\log}(n)$
Form second derivation
Number = 0; n = 0
S116
$n < N_F - 2$?
No
Sort max_I(n) and max_n(n)
Yes
Exact position of a local maximum already found
$I'_{K,\log}(n) = 0$ and $I''_{K,\log}(n) < 0$
Yes
S112
max_I(number) = $I_{K,\log}(n)$
S113
max_n(number) = n + 0.5
number = number + 1
No
$I'_{K,\log}(n) * I'_{K,\log}(n+1) < 0$ and $I''_{K,\log}(n) < 0$?
No
Change of sign in the first derivation? If yes, does this correspond to a local maximum?
Yes
Yes
Derivation_left = $10^{I_{K,\log}(n+1)/20} - 10^{I_{K,\log}(n)/20}$
Derivation_right = $10^{I_{K,\log}(n+2)/20} - 10^{I_{K,\log}(n+1)/20}$
$\text{max_n(number)} = n - \frac{\text{derivation_left}}{\text{derivation_right} - \text{derivation_left}} + 0.5$
S114
Establishment of 2 interpolation points in the linear range
Linear interpolation of the characteristic $I'_{K,\log}(n)$ between the two interpolation points $I'_{K,\log}(n)$ and $I'_{K,\log}(n+1)$, in order to find the exact position at which $I'_{K,\log}(\text{max_n}) = 0$ applies
max_I(number) = $I_{K,\log}(n)$
S115
number = number + 1
n = n + 1

Fig. 5

P27072