

range 0-22

{Adam{lr:0.03,b1:0,b2:0.9}} last f:18.68701745830853,gen_err:17.559011679483298

{Adam{lr:0.03,b1:0,b2:0.999}} last f:18.701776539185957,gen_err:17.537459890013125

{Adam{lr:0.03,b1:0,b2:0.8}} last f:18.709904593448172,gen_err:17.57334999388684



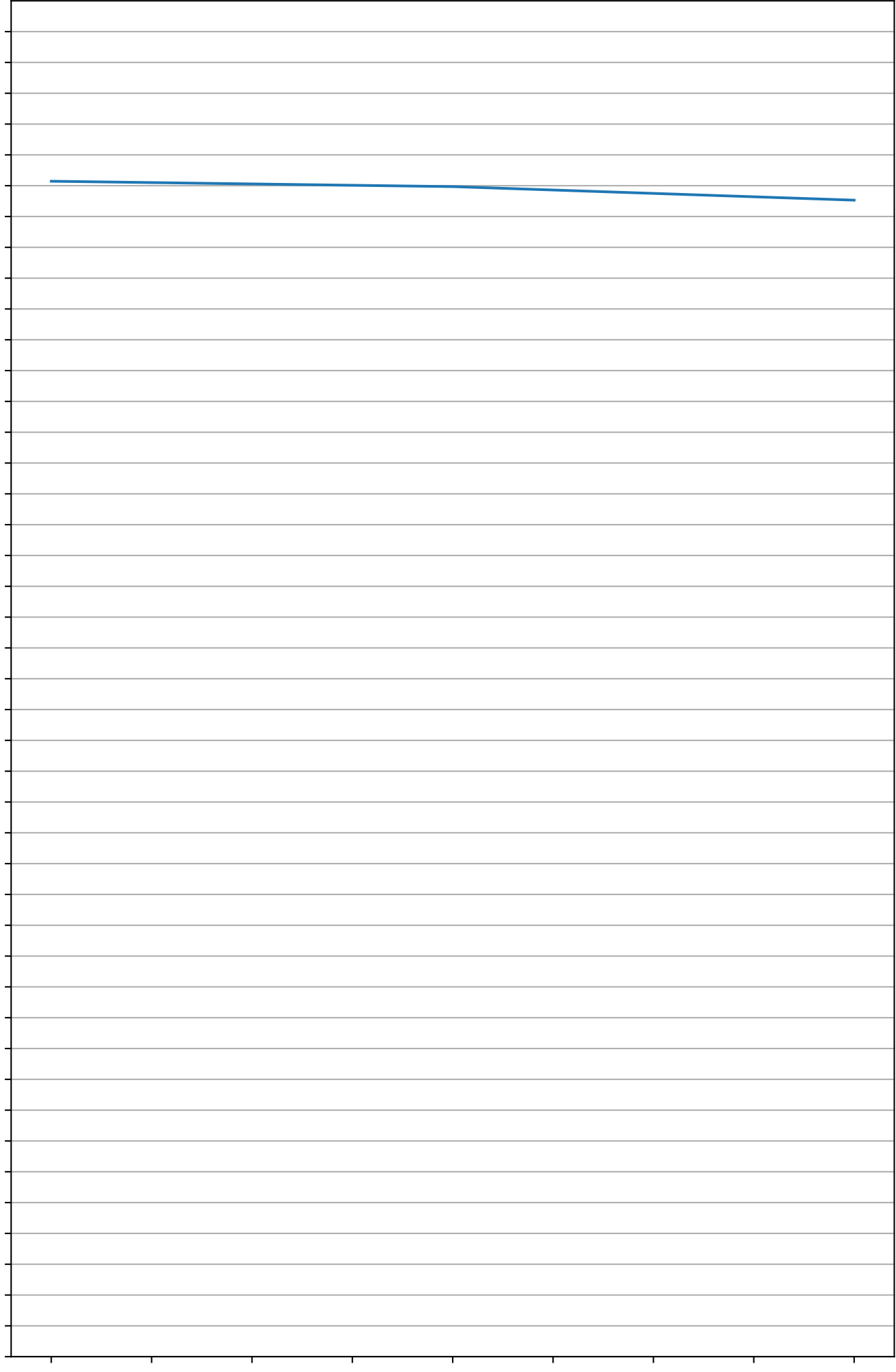
{Adam{lr:0.03,b1:0.3,b2:0.999}} last f:18.735381356297253,gen_err:17.636008713220697

{Adam{lr:0.03,b1:0.3,b2:0.9}} last f:18.73897477685957,gen_err:17.648609021021613

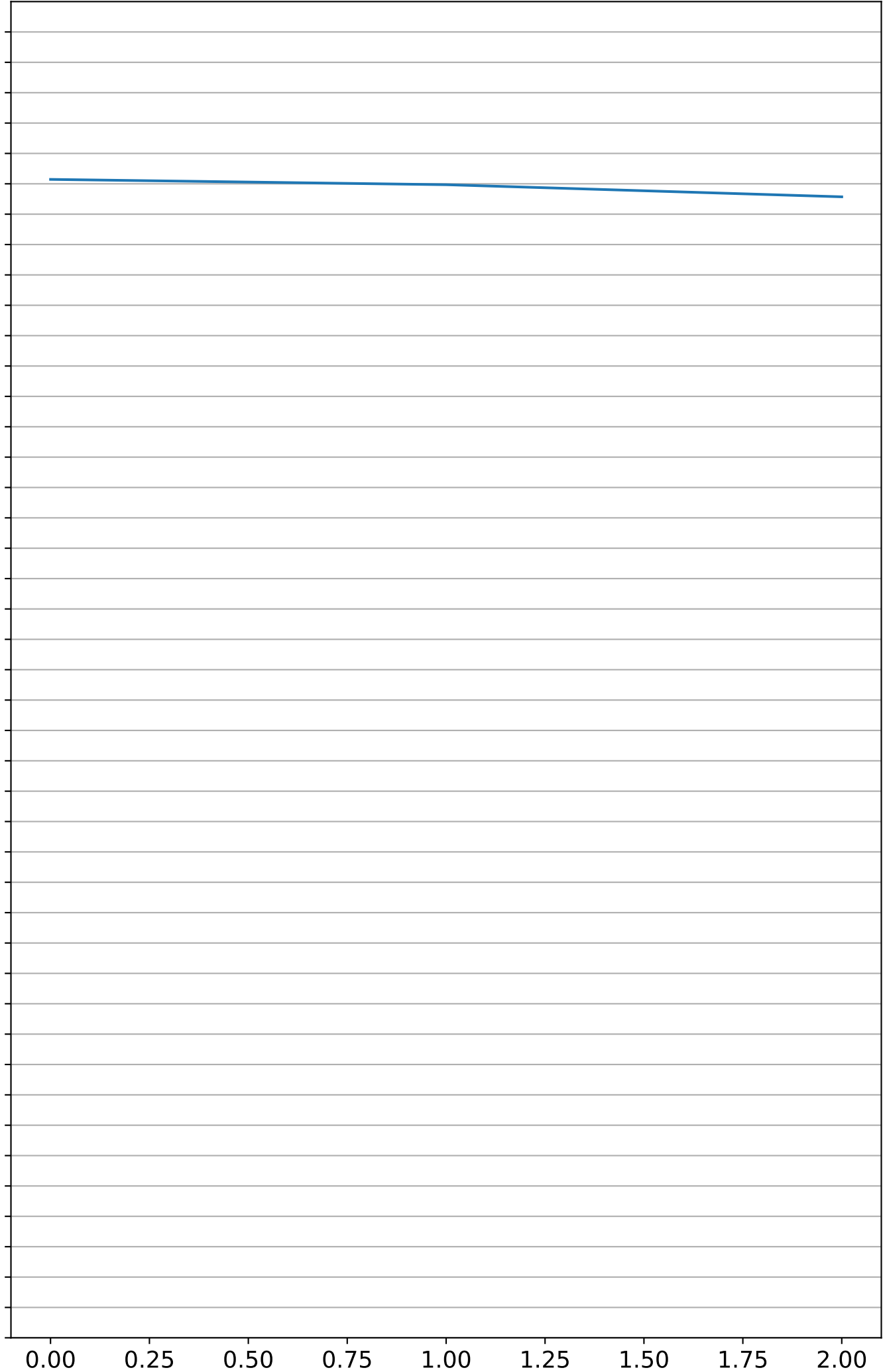
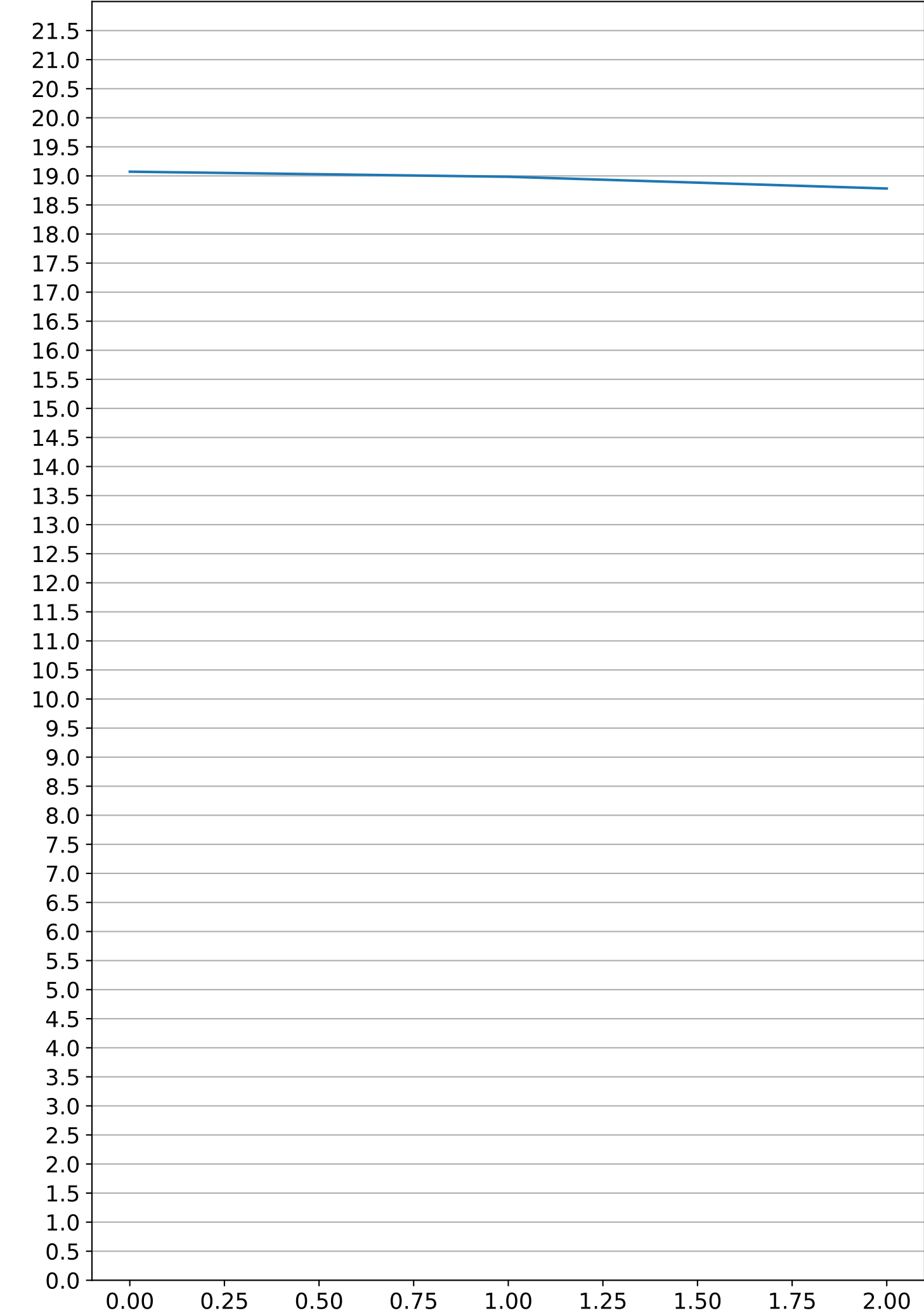
{Adam{lr:0.03,b1:0.3,b2:0.8}} last f:18.74273722091352,gen_err:17.661223003800067

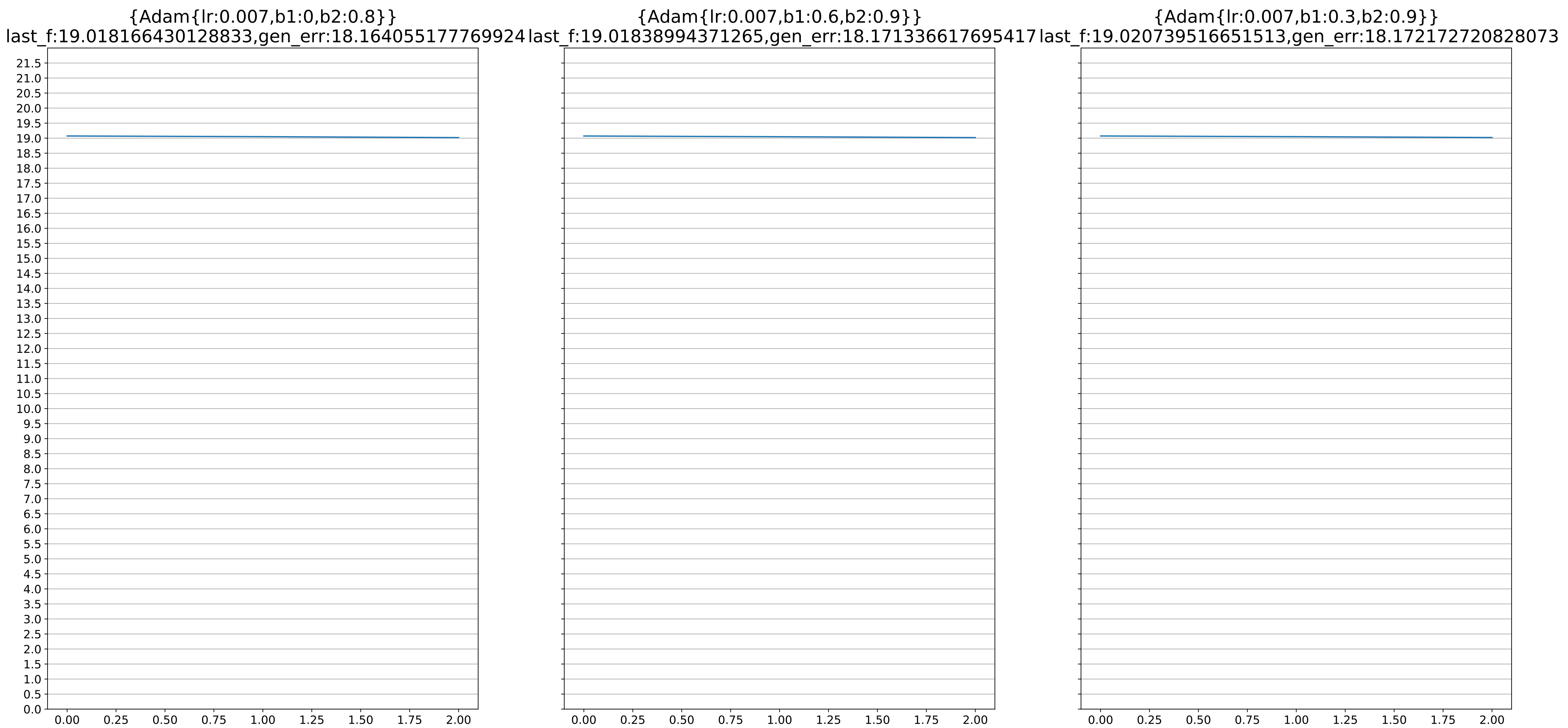
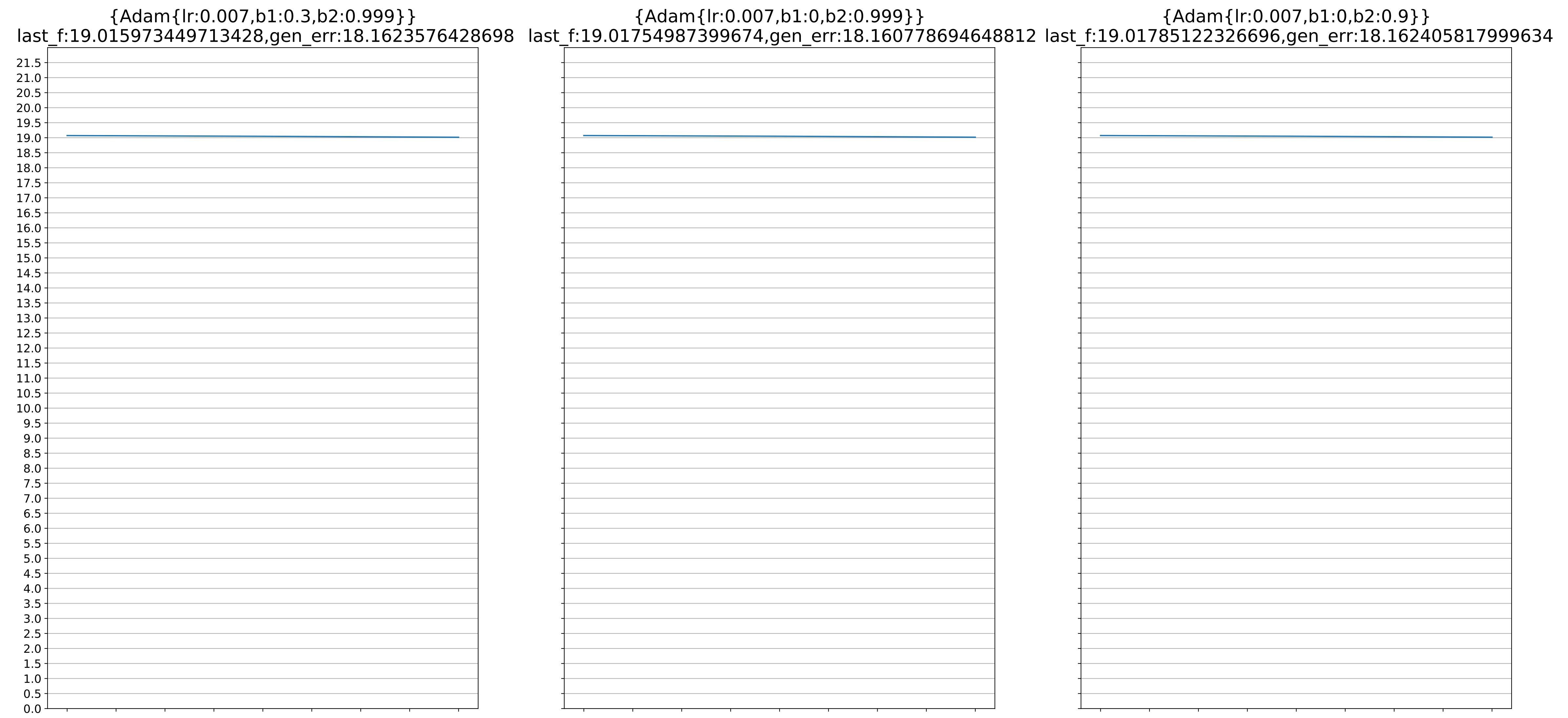


{Adam{lr:0.03,b1:0.6,b2:0.999}} last f:18.761923319242037,gen_err:17.706248691471295 {Adam{lr:0.03,b1:0.6,b2:0.9}} last f:18.76516405781357,gen_err:17.71565715080716 {Adam{lr:0.03,b1:0.6,b2:0.8}} last f:18.768544930782433,gen_err:17.72517751132296



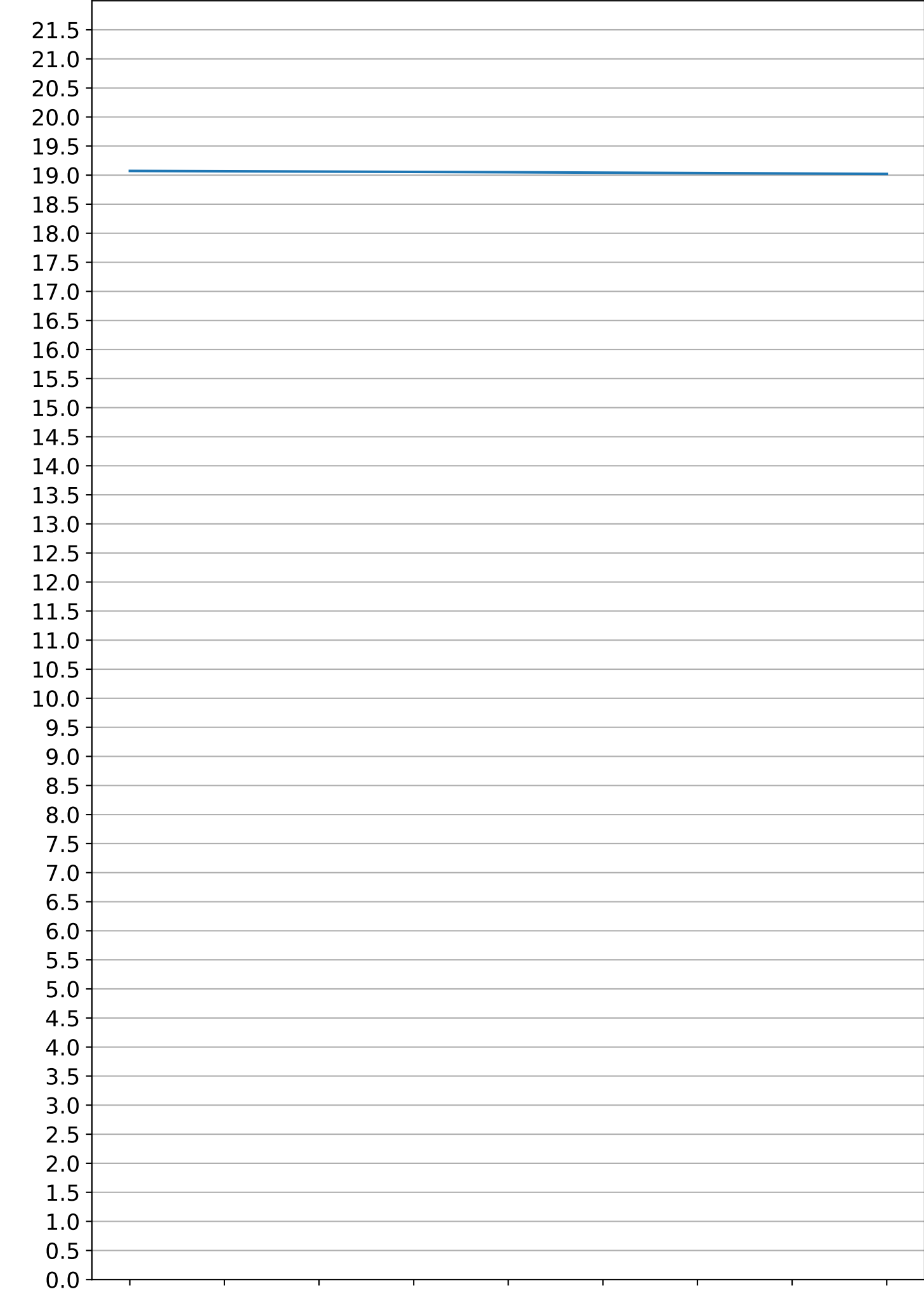
{Adam{lr:0.03,b1:0.9,b2:0.999}} last f:18.78277723325658,gen_err:17.75601768070785 {Adam{lr:0.03,b1:0.9,b2:0.9}} last f:18.78570839249027,gen_err:17.763824177335387 {Adam{lr:0.03,b1:0.9,b2:0.8}} last f:18.788759538878267,gen_err:17.771731477569524





{Adam{lr:0.007,b1:0.3,b2:0.8}}

last f:19.021002655128658,gen_err:18.173415070008105



{Adam{lr:0.007,b1:0.6,b2:0.999}}

last f:19.022491359418968,gen_err:18.17838471908692



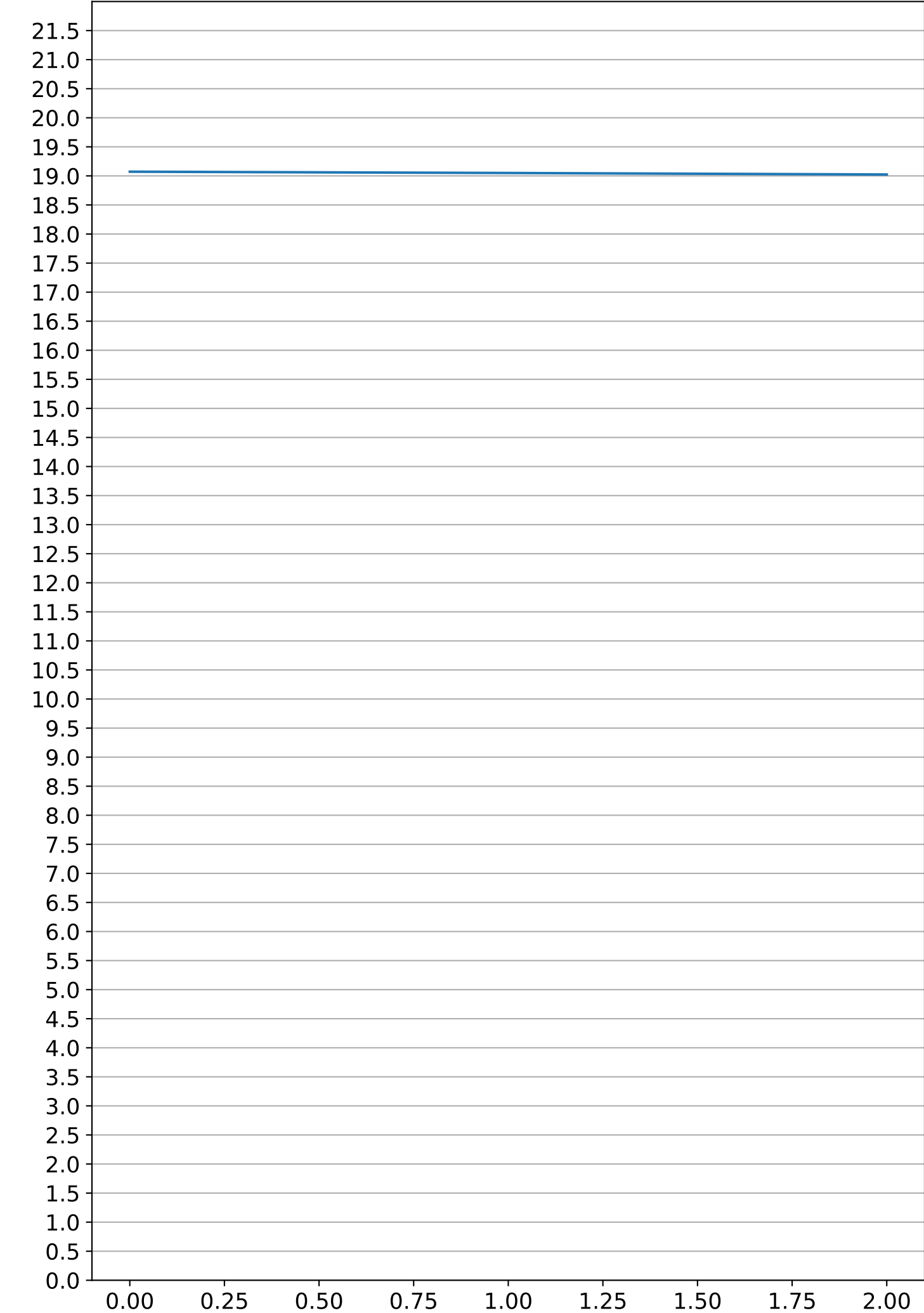
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last f:19.02294851414245,gen_err:18.18033772133043



{Adam{lr:0.007,b1:0.9,b2:0.999}}

last f:19.02393514931392,gen_err:18.18375848726858



{Adam{lr:0.007,b1:0.9,b2:0.9}}

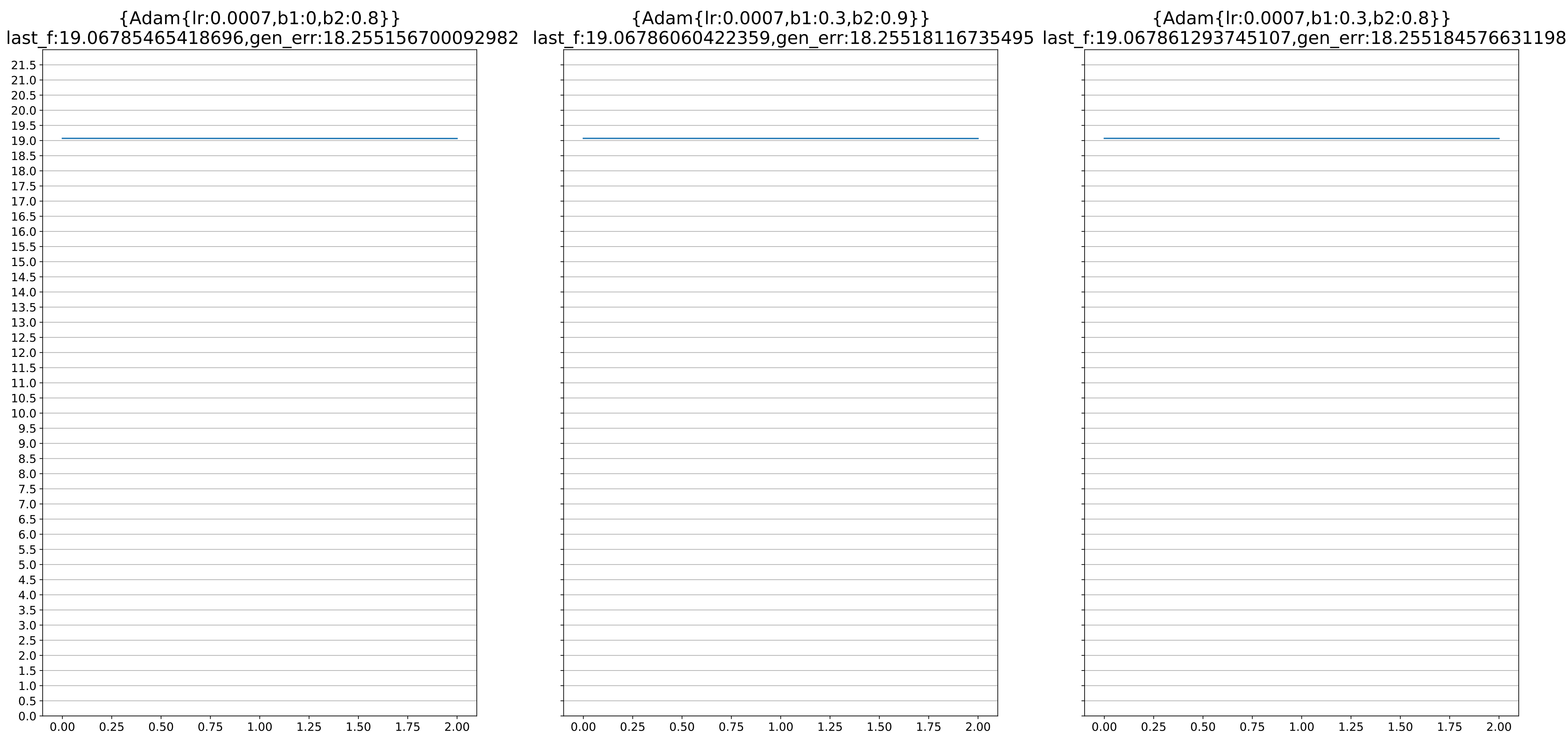
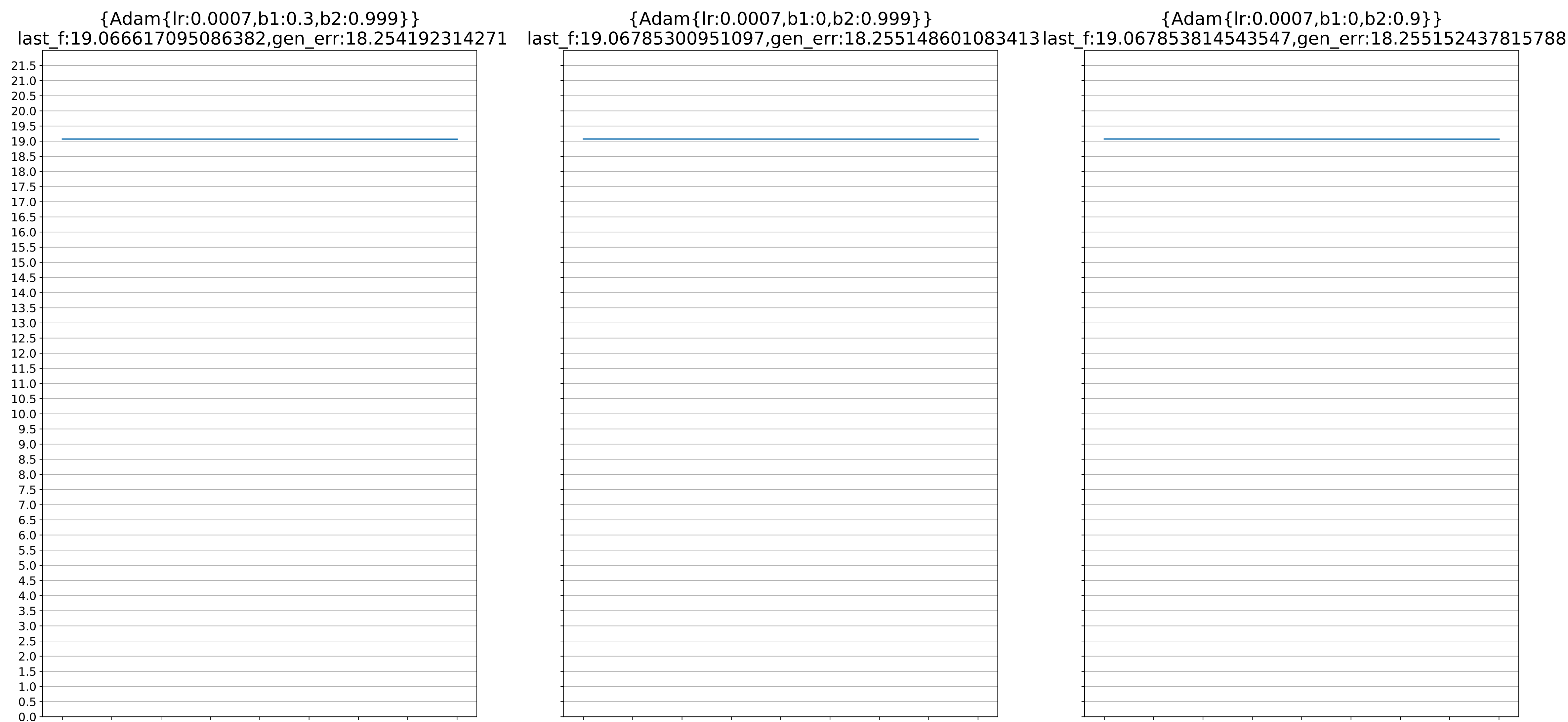
last f:19.024139622406736,gen_err:18.18456620685587



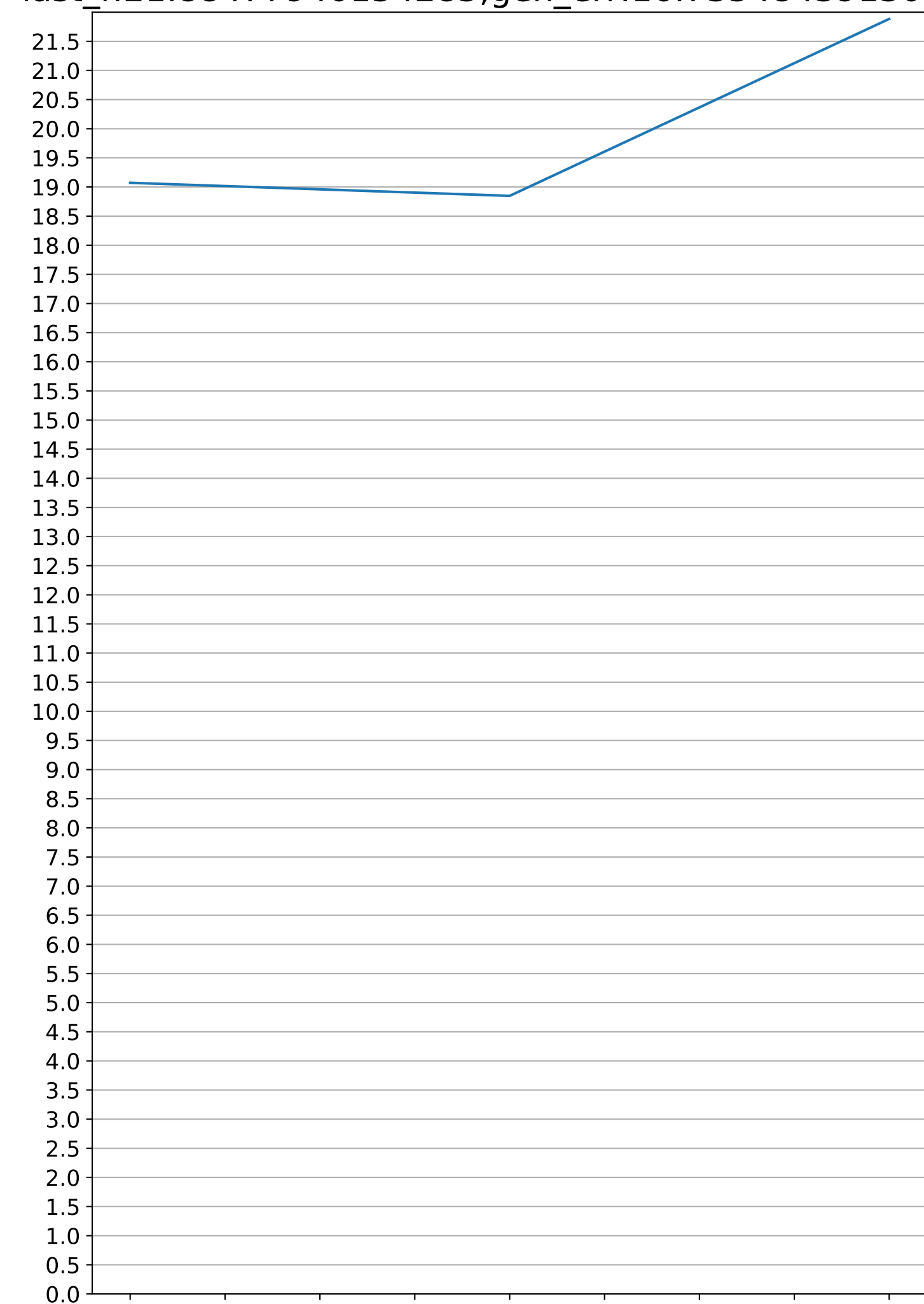
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last f:19.024356845084554,gen_err:18.1853969636354

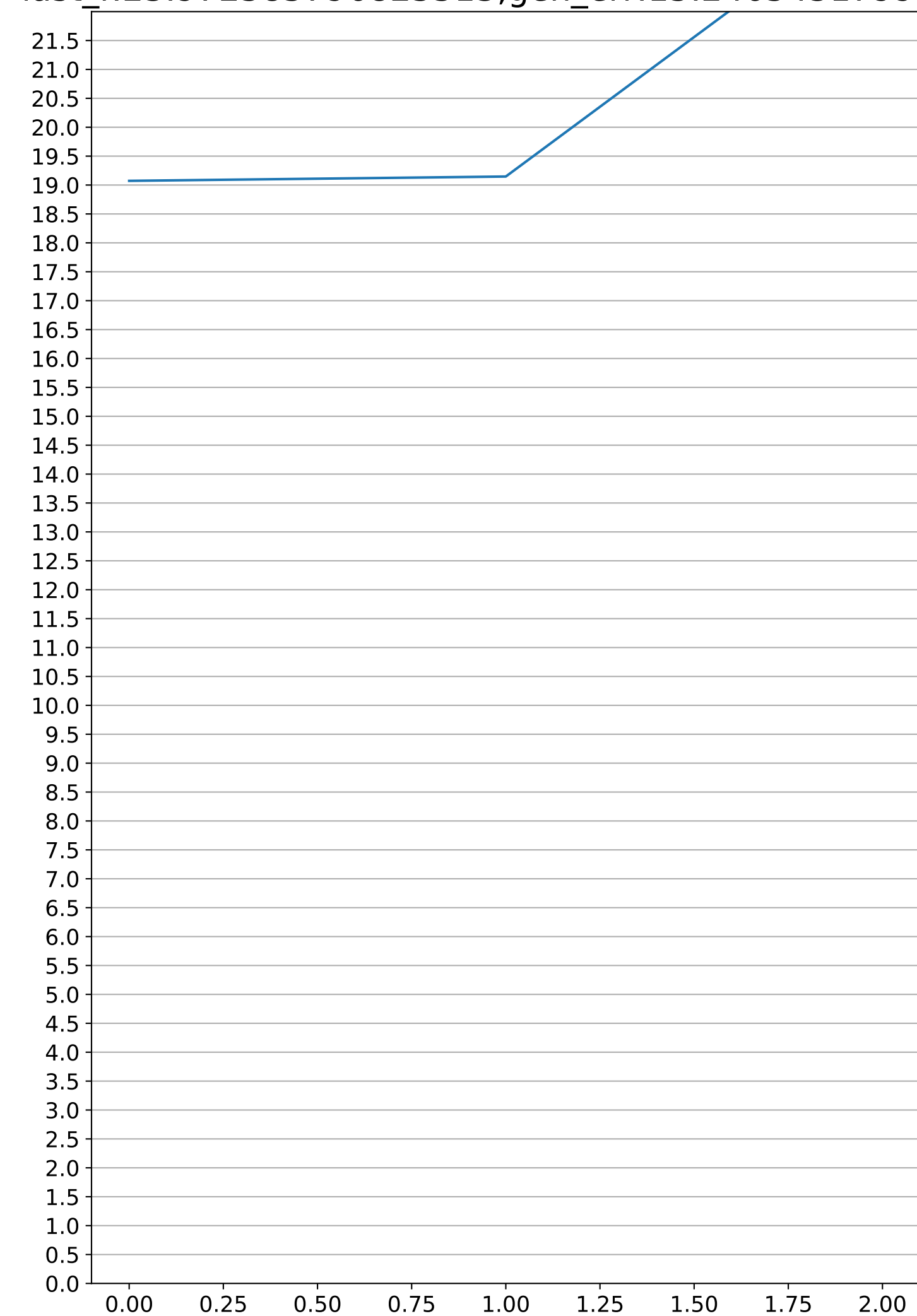




{Adam{lr:0.4,b1:0.9,b2:0.999}} last f:21.88477940154285,gen_err:16.735484391301533 {Adam{lr:0.4,b1:0.9,b2:0.8}} last f:22.205669871120154,gen_err:16.28464150037766 {Adam{lr:0.4,b1:0.9,b2:0.9}} last f:22.471440464989044,gen_err:16.224093414198826

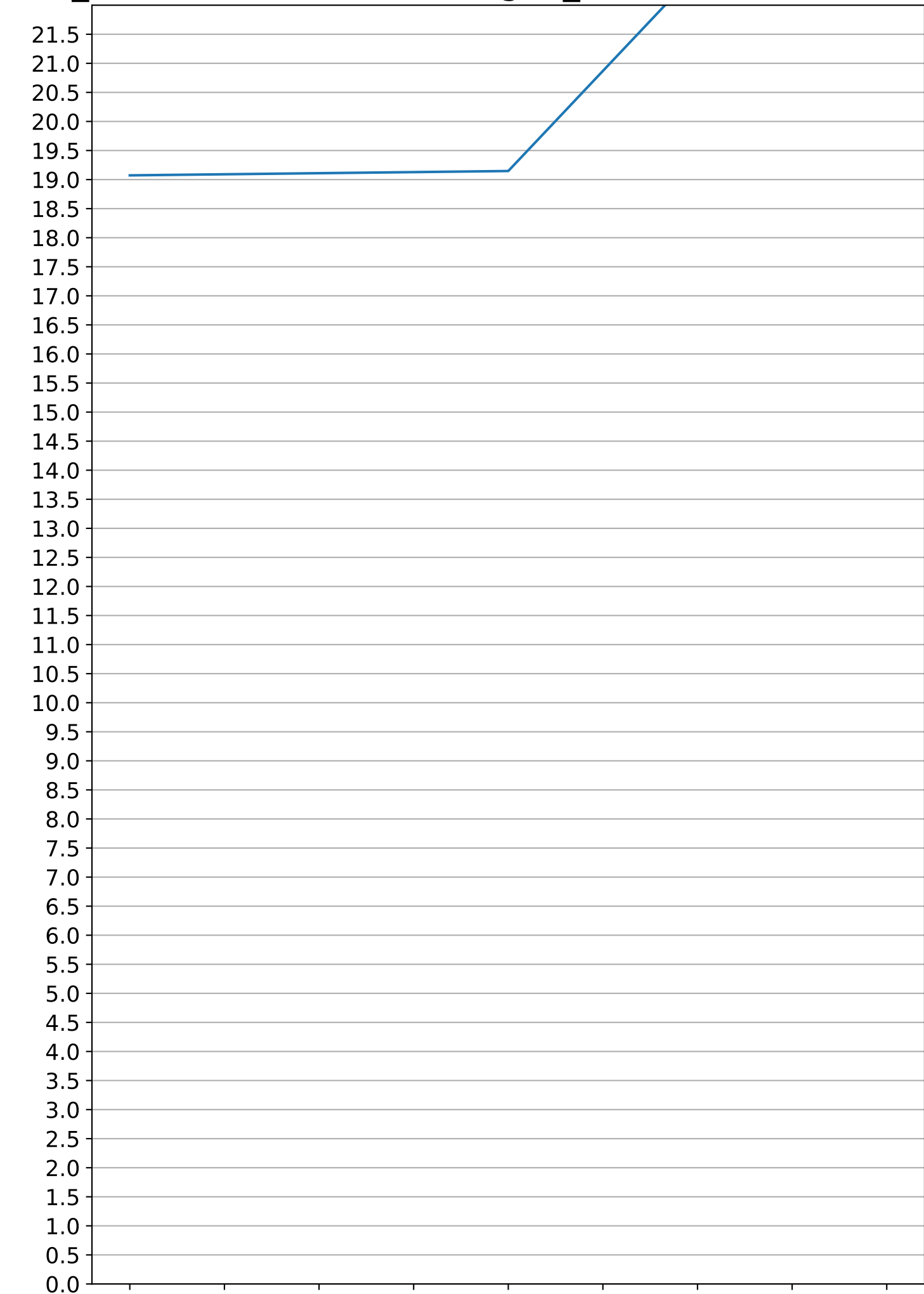


{Adam{lr:0.4,b1:0.6,b2:0.8}} last f:23.972585796825513,gen_err:15.24654317991033 {Adam{lr:0.4,b1:0.6,b2:0.9}} last f:24.268745784871427,gen_err:15.202067504206507 {Adam{lr:0.4,b1:0.6,b2:0.999}} last f:24.55022409432258,gen_err:15.17580853017433



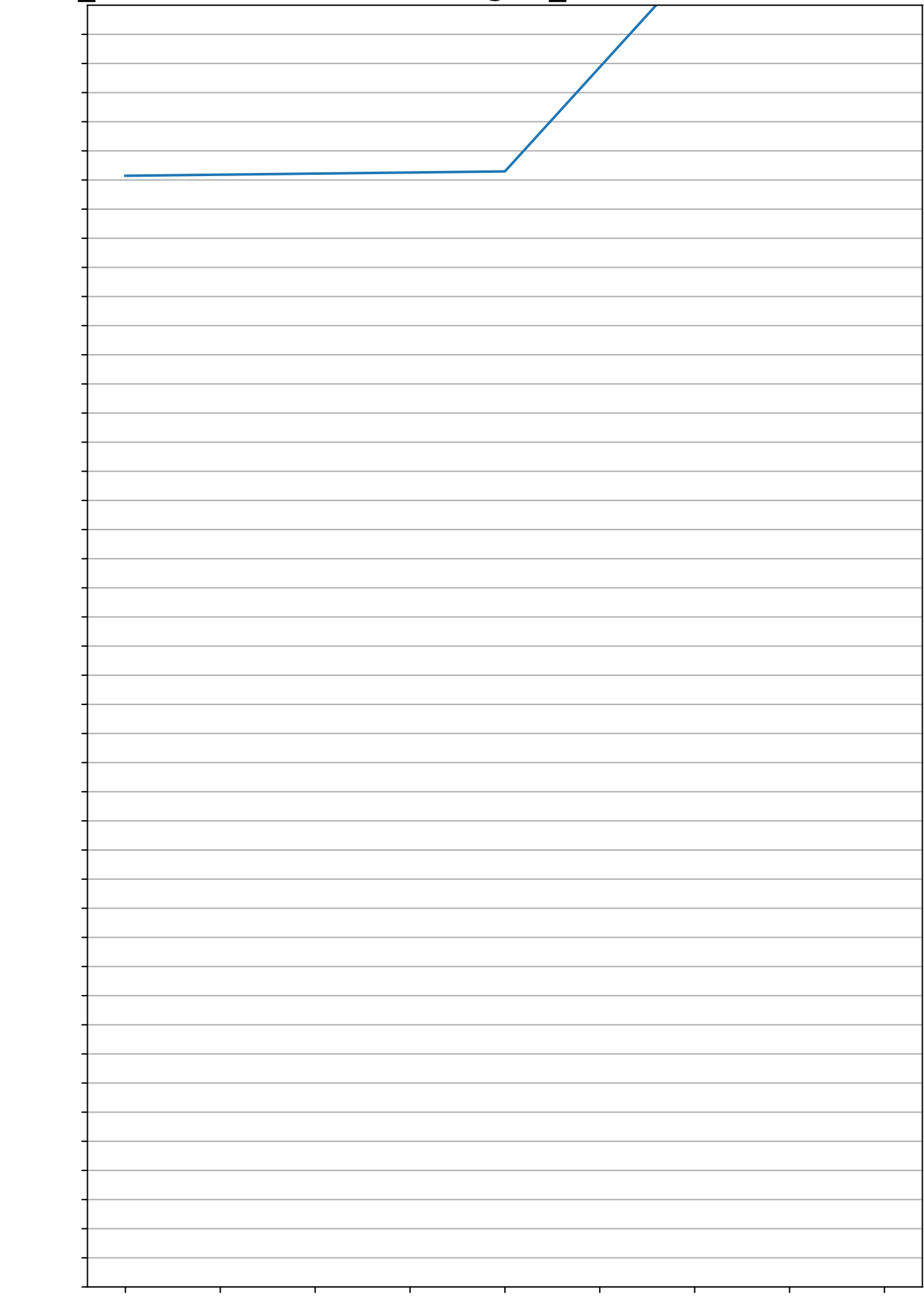
{Adam{lr:0.4,b1:0.3,b2:0.8}}

last f:26.034659911667845,gen_err:13.757111701815134



{Adam{lr:0.4,b1:0.3,b2:0.9}}

last f:26.30795822860747,gen_err:13.906218985186218



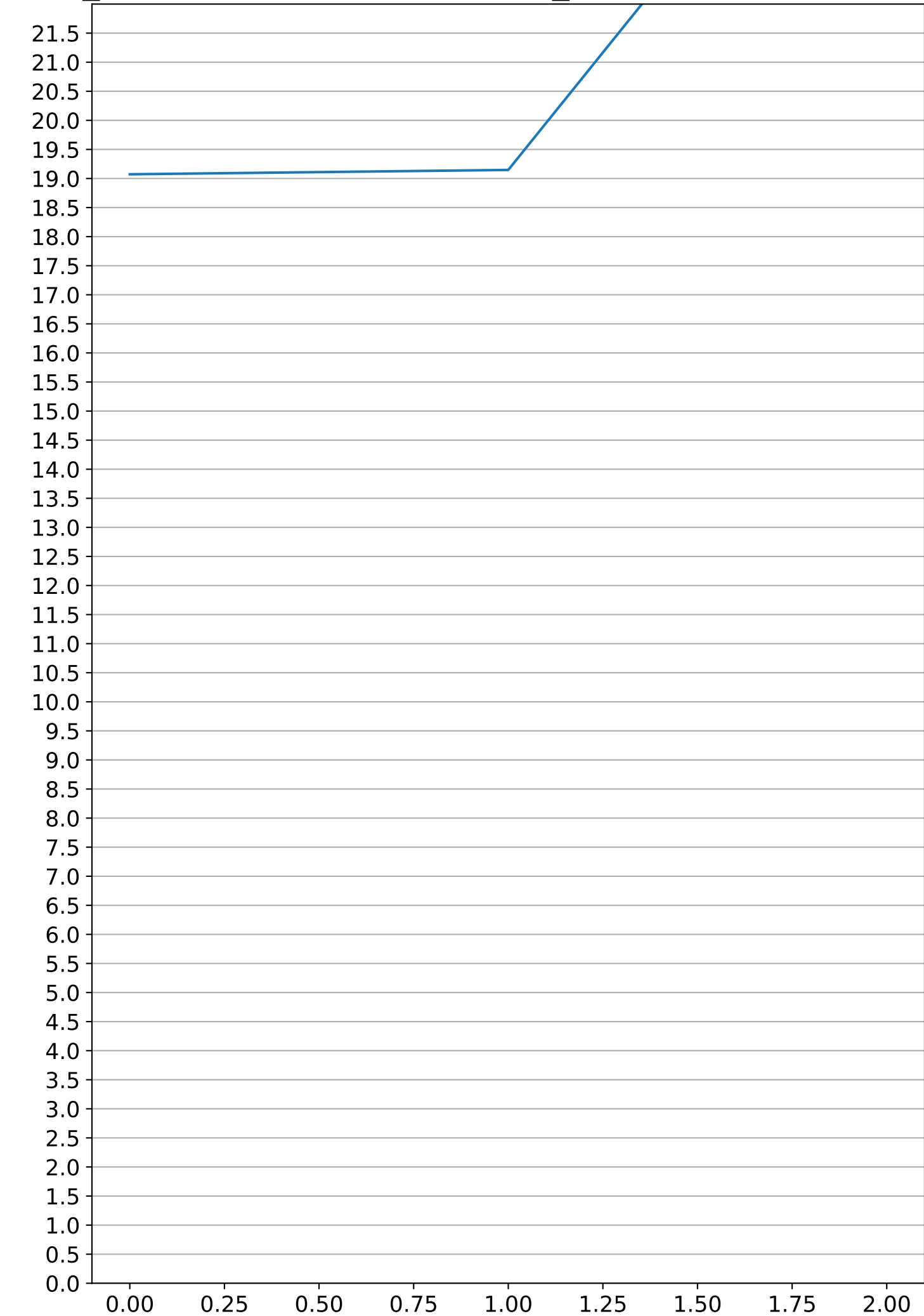
{Adam{lr:0.4,b1:0.3,b2:0.999}}

last f:26.562336154079823,gen_err:14.110829512382473



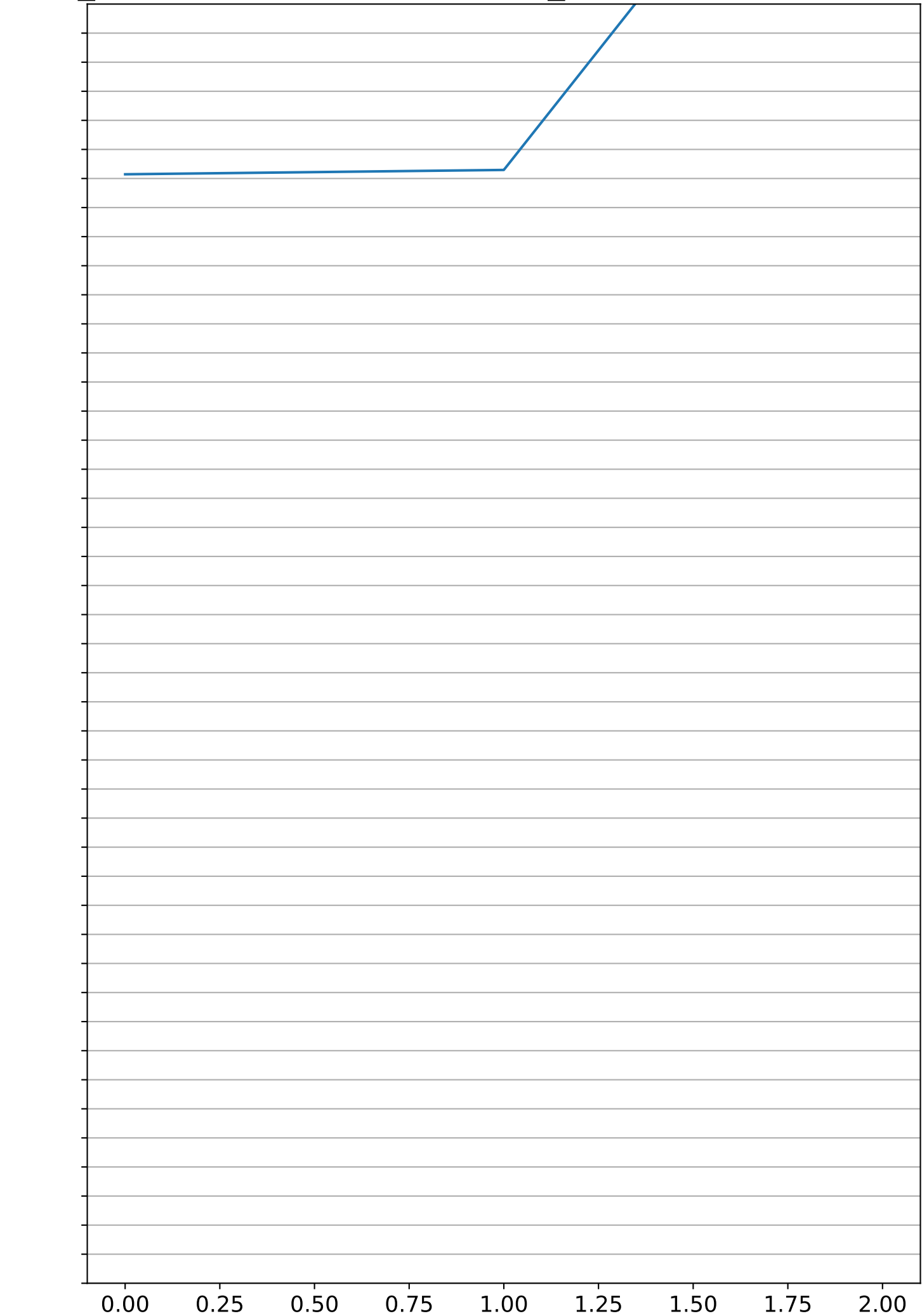
{Adam{lr:0.4,b1:0,b2:0.8}}

last f:27.22563372232075,gen_err:17.571169727832753



{Adam{lr:0.4,b1:0,b2:0.9}}

last f:27.37929582492181,gen_err:18.146593043653112

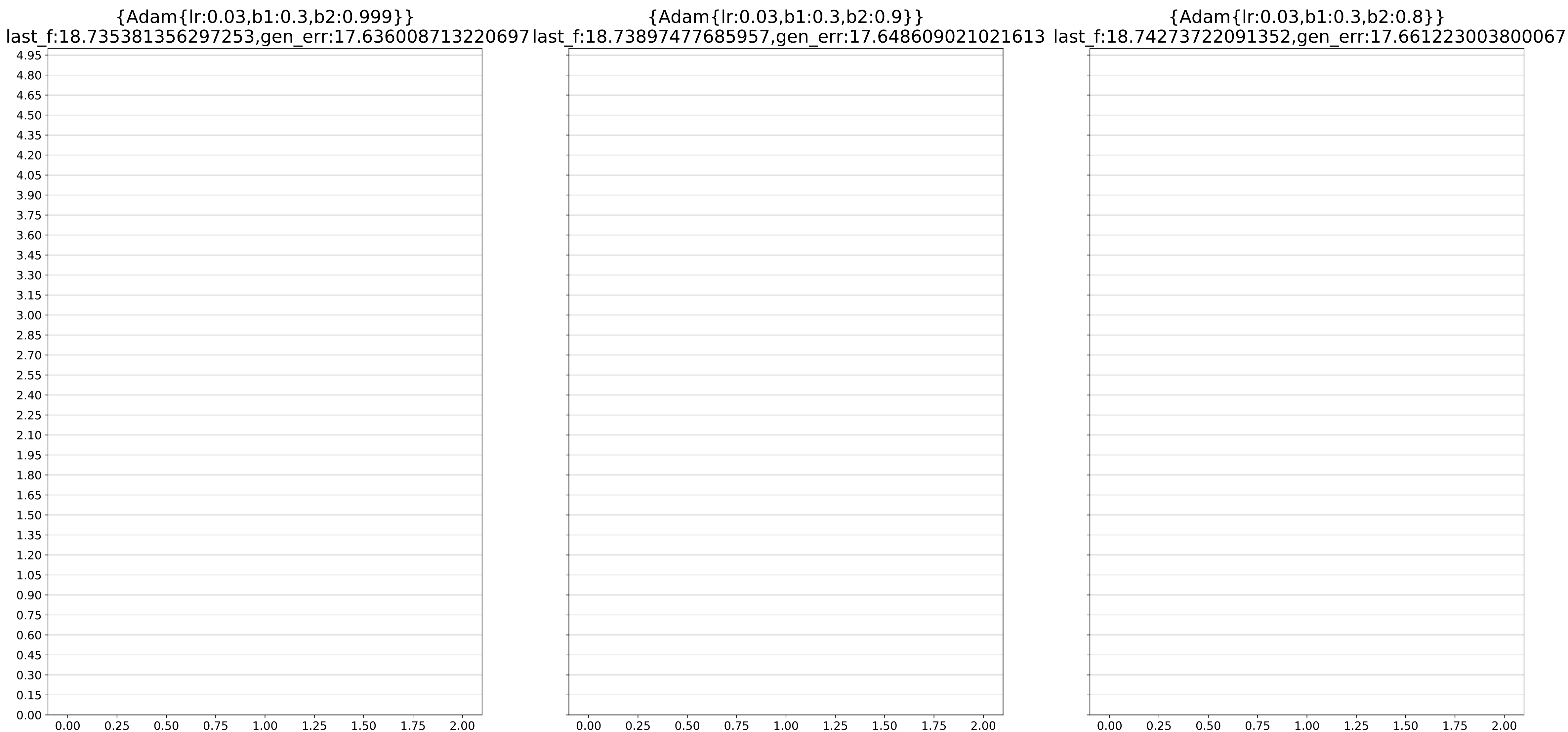
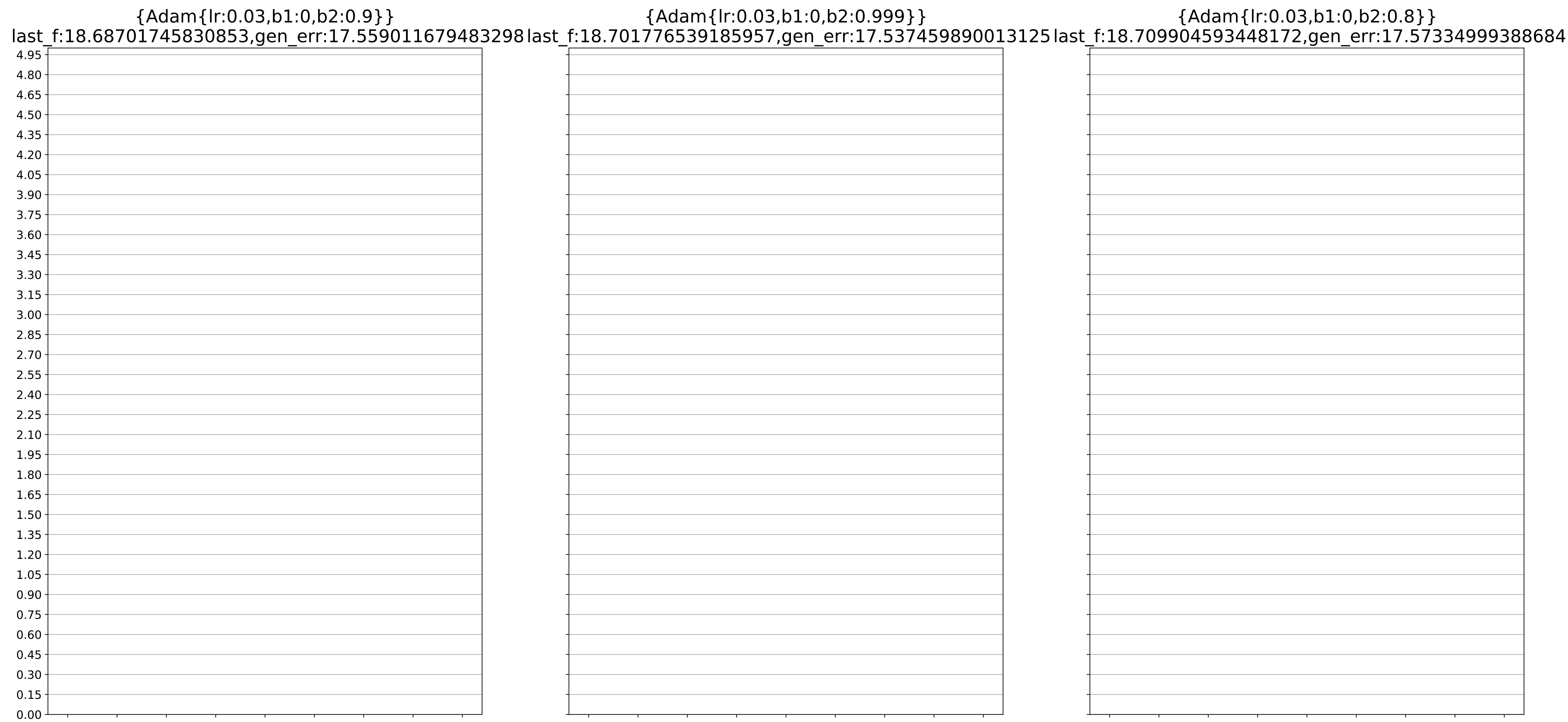


{Adam{lr:0.4,b1:0,b2:0.999}}

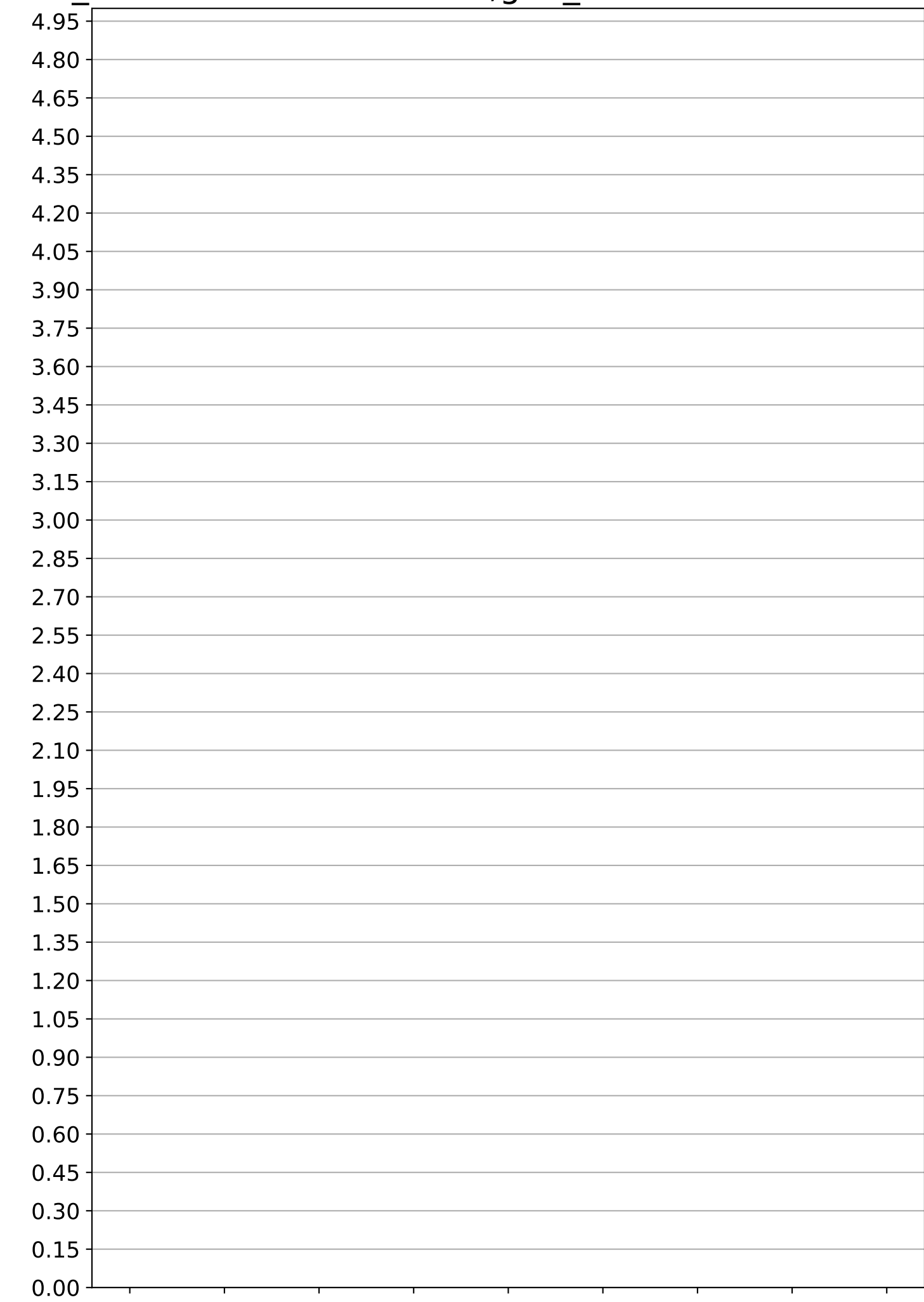
last f:27.519226669171033,gen_err:18.744205288071793



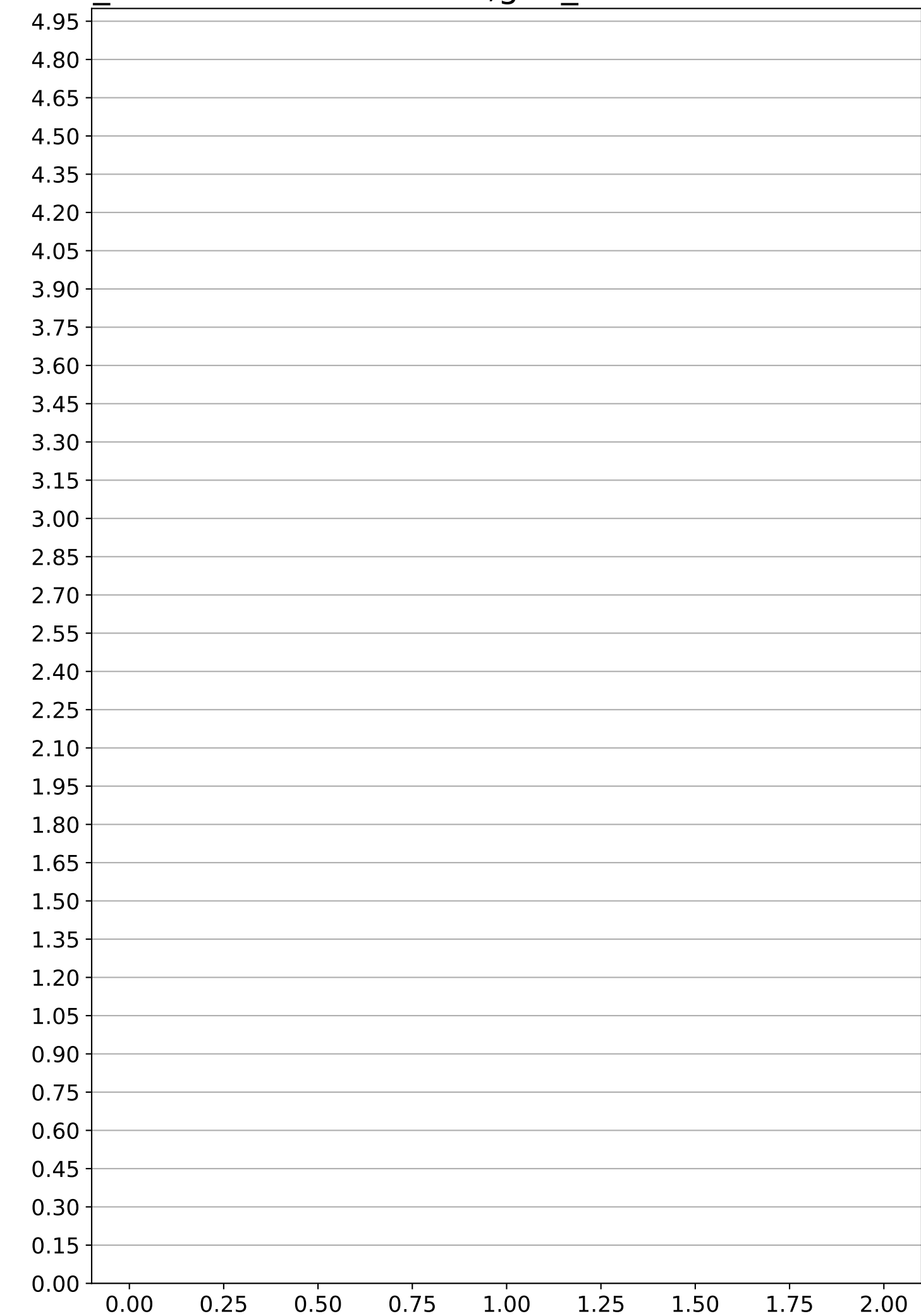
range 0-5



$\{\text{Adam}\{\text{lr}:0.03,\text{b1}:0.6,\text{b2}:0.999\}\}$ $\{\text{Adam}\{\text{lr}:0.03,\text{b1}:0.6,\text{b2}:0.9\}\}$ $\{\text{Adam}\{\text{lr}:0.03,\text{b1}:0.6,\text{b2}:0.8\}\}$
last f:18.761923319242037,gen_err:17.706248691471295 last f:18.76516405781357,gen_err:17.71565715080716 last f:18.768544930782433,gen_err:17.72517751132296



$\{\text{Adam}\{\text{lr}:0.03,\text{b1}:0.9,\text{b2}:0.999\}\}$ $\{\text{Adam}\{\text{lr}:0.03,\text{b1}:0.9,\text{b2}:0.9\}\}$ $\{\text{Adam}\{\text{lr}:0.03,\text{b1}:0.9,\text{b2}:0.8\}\}$
last f:18.78277723325658,gen_err:17.75601768070785 last f:18.78570839249027,gen_err:17.763824177335387 last f:18.788759538878267,gen_err:17.771731477569524



Adam(lr:0.007,b1:0.3,b2:0.999}	Adam(lr:0.007,b1:0,b2:0.999}	Adam(lr:0.007,b1:0,b2:0.9}
last_f:19.015973449713428,gen_err:18.1623576428698	last_f:19.01754987399674,gen_err:18.160778694648812	last_f:19.01785122326696,gen_err:18.162405817999634

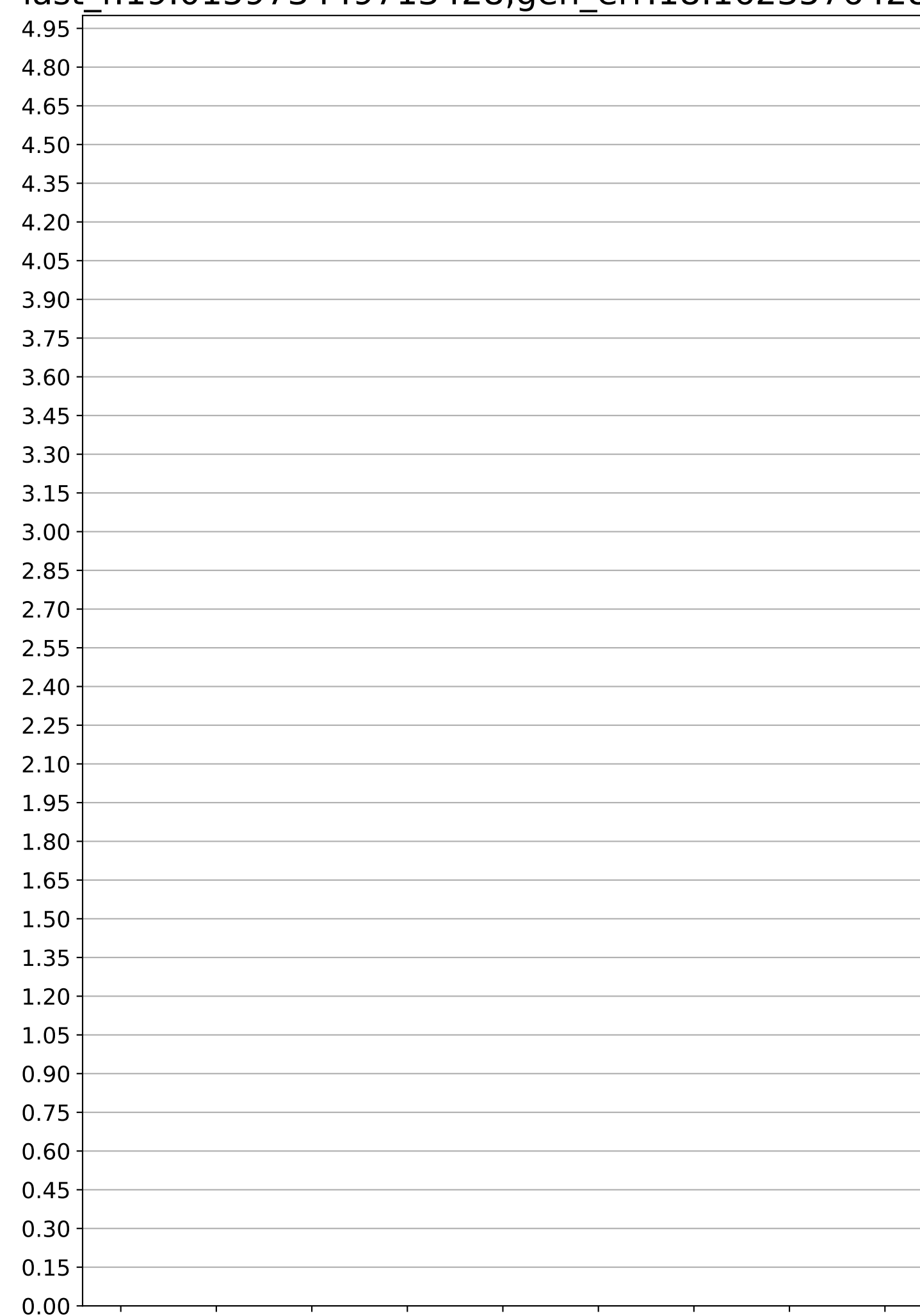
last f:19.015973449713428,gen err:18.1623576428698

Adam(lr:0.007,b1:0.3,b2:0.999}	Adam(lr:0.007,b1:0,b2:0.999}	Adam(lr:0.007,b1:0,b2:0.9}
last_f:19.015973449713428,gen_err:18.1623576428698	last_f:19.01754987399674,gen_err:18.160778694648812	last_f:19.01785122326696,gen_err:18.162405817999634

last f:19.015973449713428,gen err:18.1623576428698 last f:19.01754987399674,gen err:18.160778694648812

Adam(lr:0.007,b1:0.3,b2:0.999}	Adam(lr:0.007,b1:0,b2:0.999}	Adam(lr:0.007,b1:0,b2:0.9}
last_f:19.015973449713428,gen_err:18.1623576428698	last_f:19.01754987399674,gen_err:18.160778694648812	last_f:19.01785122326696,gen_err:18.162405817999634

last f:19.015973449713428,gen err:18.1623576428698 last f:19.01754987399674,gen err:18.160778694648812 last f:19.01785122326696,gen err:18.162405817999634



$\{\text{Adam}\{\text{lr}:0.007,\text{b1}:0,\text{b2}:0.8\}\}$	$\{\text{Adam}\{\text{lr}:0.007,\text{b1}:0.6,\text{b2}:0.9\}\}$	$\{\text{Adam}\{\text{lr}:0.007,\text{b1}:0.3,\text{b2}:0.9\}\}$
last_f:19.018166430128833,gen_err:18.164055177769924	last_f:19.01838994371265,gen_err:18.171336617695417	last_f:19.020739516651513,gen_err:18.172172720828073

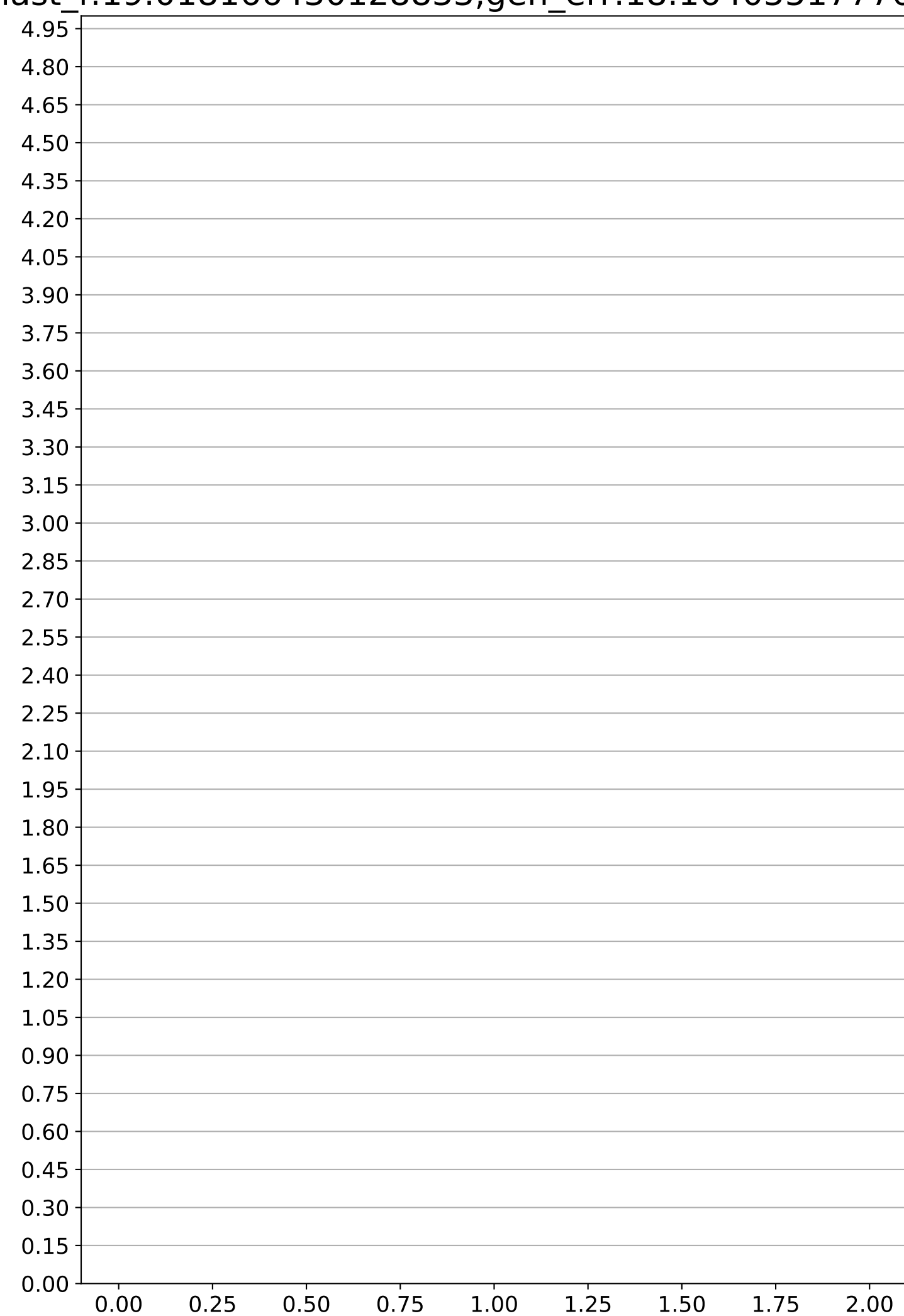
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last f:19.018166430128833,gen err:18.164055177769924
```

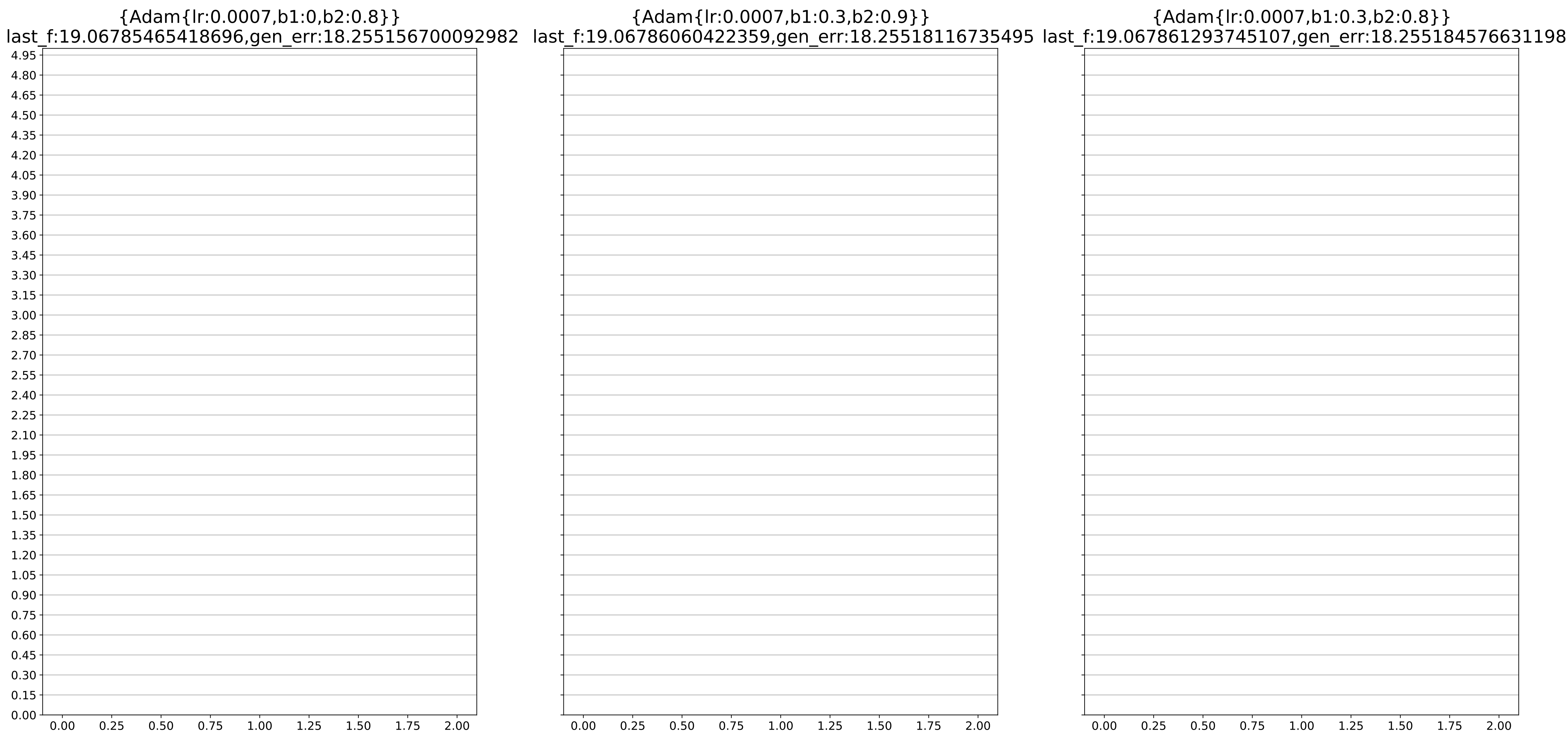
$\{\text{Adam}\{\text{lr}:0.007,\text{b1}:0,\text{b2}:0.8\}\}$	$\{\text{Adam}\{\text{lr}:0.007,\text{b1}:0.6,\text{b2}:0.9\}\}$	$\{\text{Adam}\{\text{lr}:0.007,\text{b1}:0.3,\text{b2}:0.9\}\}$
last_f:19.018166430128833,gen_err:18.164055177769924	last_f:19.01838994371265,gen_err:18.171336617695417	last_f:19.020739516651513,gen_err:18.172172720828073

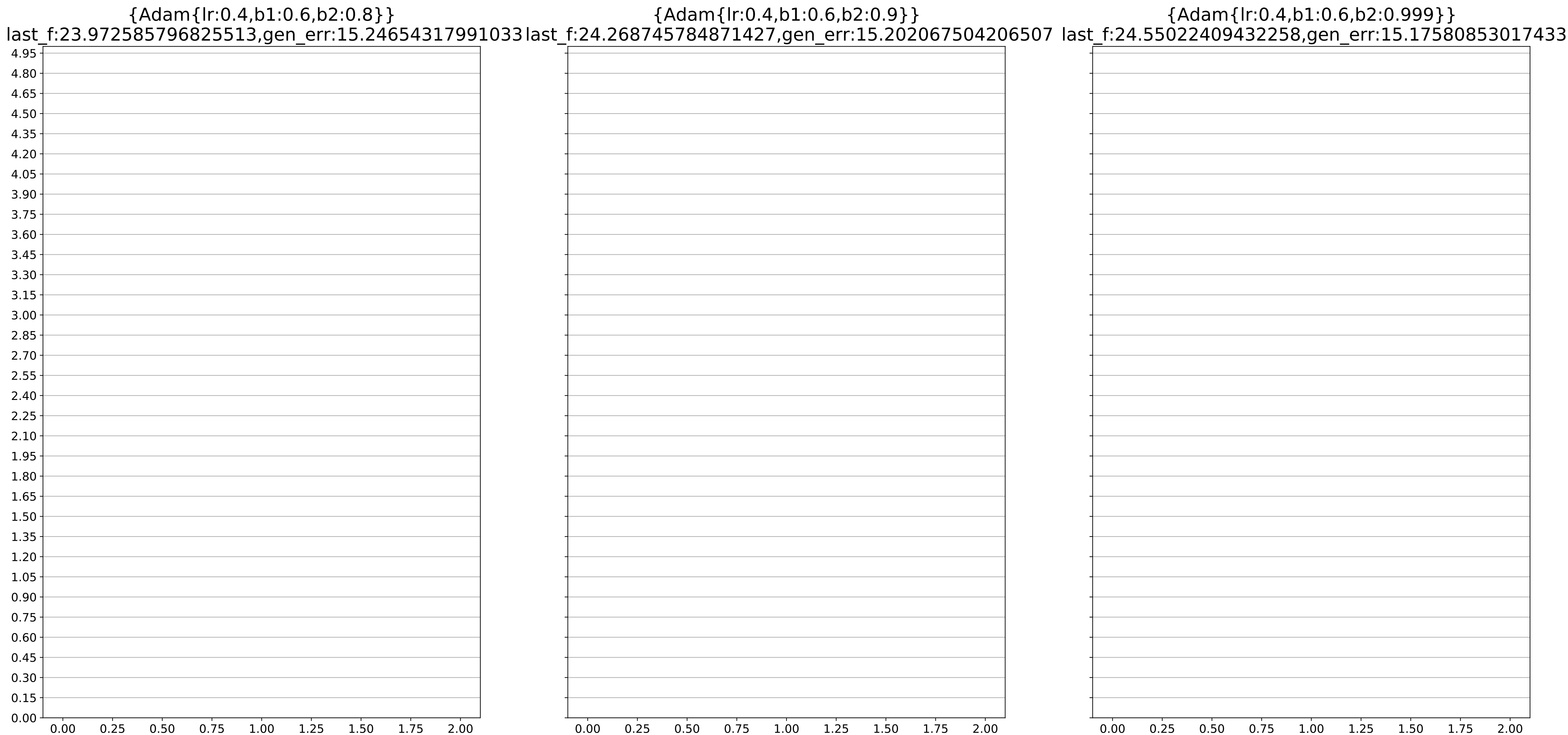
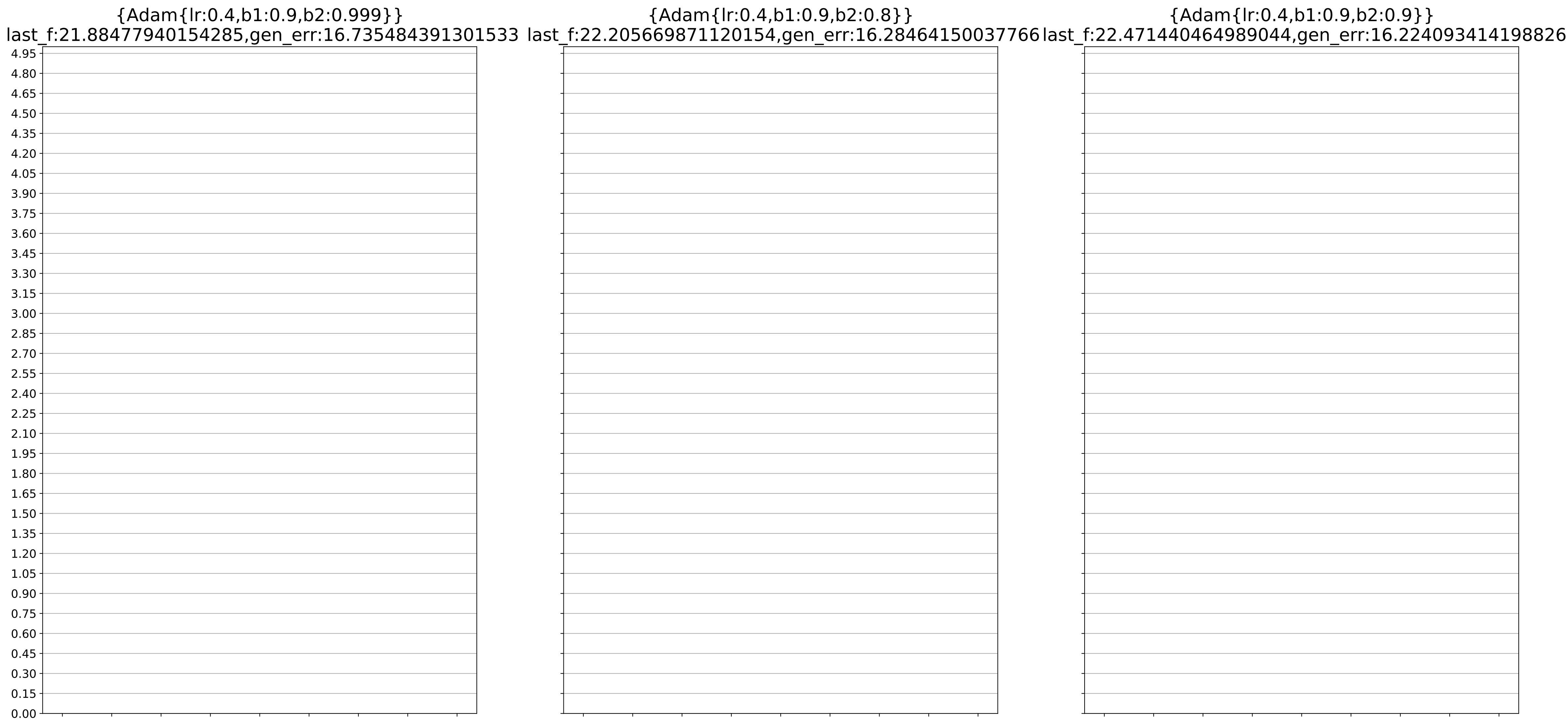
```
last f:19.018166430128833,gen err:18.164055177769924|last f:19.01838994371265,gen err:18.171336617695417
```

$\{\text{Adam}\{\text{lr}:0.007,\text{b1}:0,\text{b2}:0.8\}\}$	$\{\text{Adam}\{\text{lr}:0.007,\text{b1}:0.6,\text{b2}:0.9\}\}$	$\{\text{Adam}\{\text{lr}:0.007,\text{b1}:0.3,\text{b2}:0.9\}\}$
last_f:19.018166430128833,gen_err:18.164055177769924	last_f:19.01838994371265,gen_err:18.171336617695417	last_f:19.020739516651513,gen_err:18.172172720828073

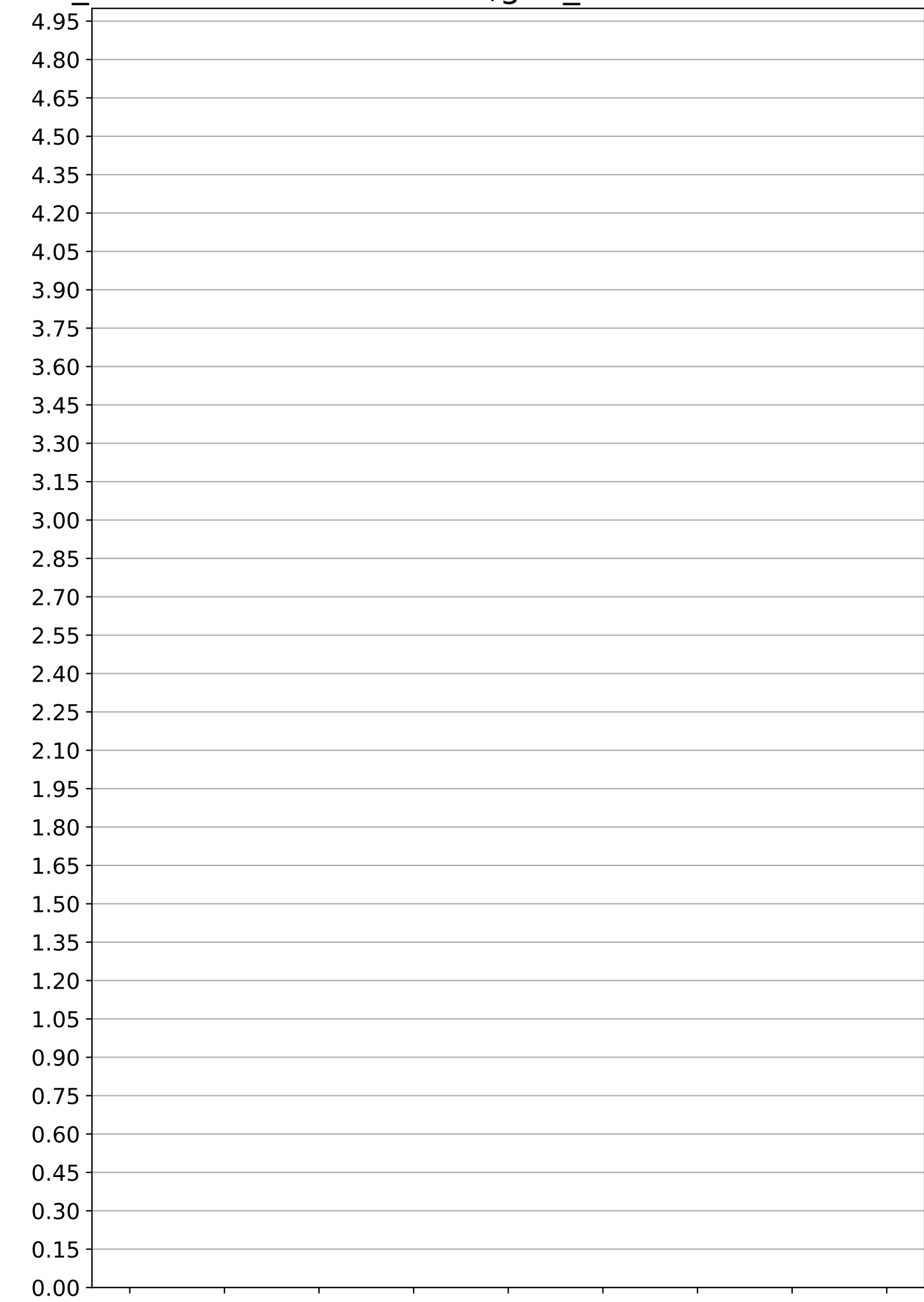
last f:19.018166430128833.gen err:18.164055177769924|last f:19.01838994371265.gen err:18.171336617695417|last f:19.020739516651513.gen err:18.172172720828073



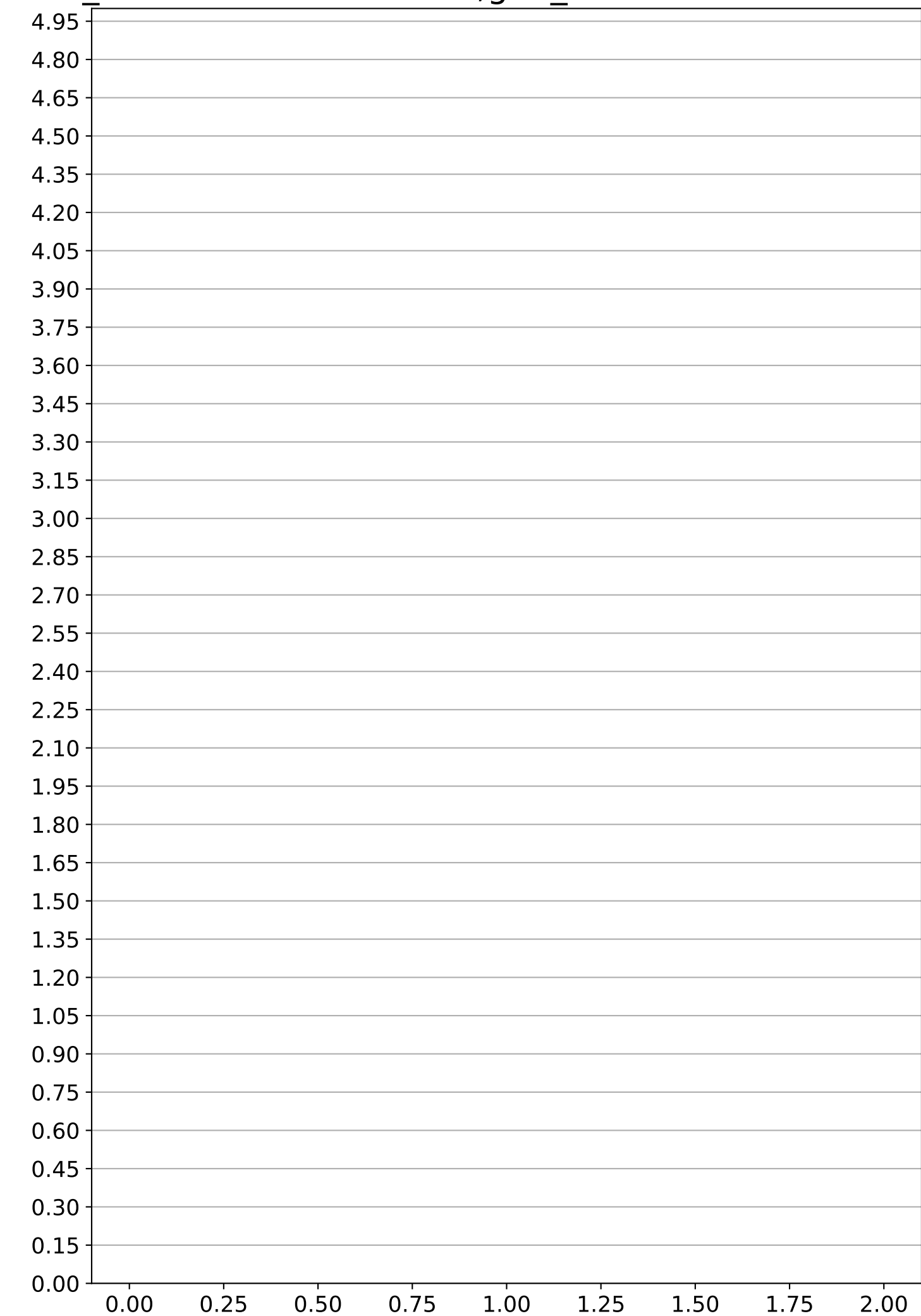




$\{\text{Adam}\{\text{lr}:0.4,\text{b1}:0.3,\text{b2}:0.8\}\}$ $\{\text{Adam}\{\text{lr}:0.4,\text{b1}:0.3,\text{b2}:0.9\}\}$ $\{\text{Adam}\{\text{lr}:0.4,\text{b1}:0.3,\text{b2}:0.999\}\}$
last f:26.034659911667845,gen_err:13.757111701815134 last f:26.30795822860747,gen_err:13.906218985186218 last f:26.562336154079823,gen_err:14.110829512382473

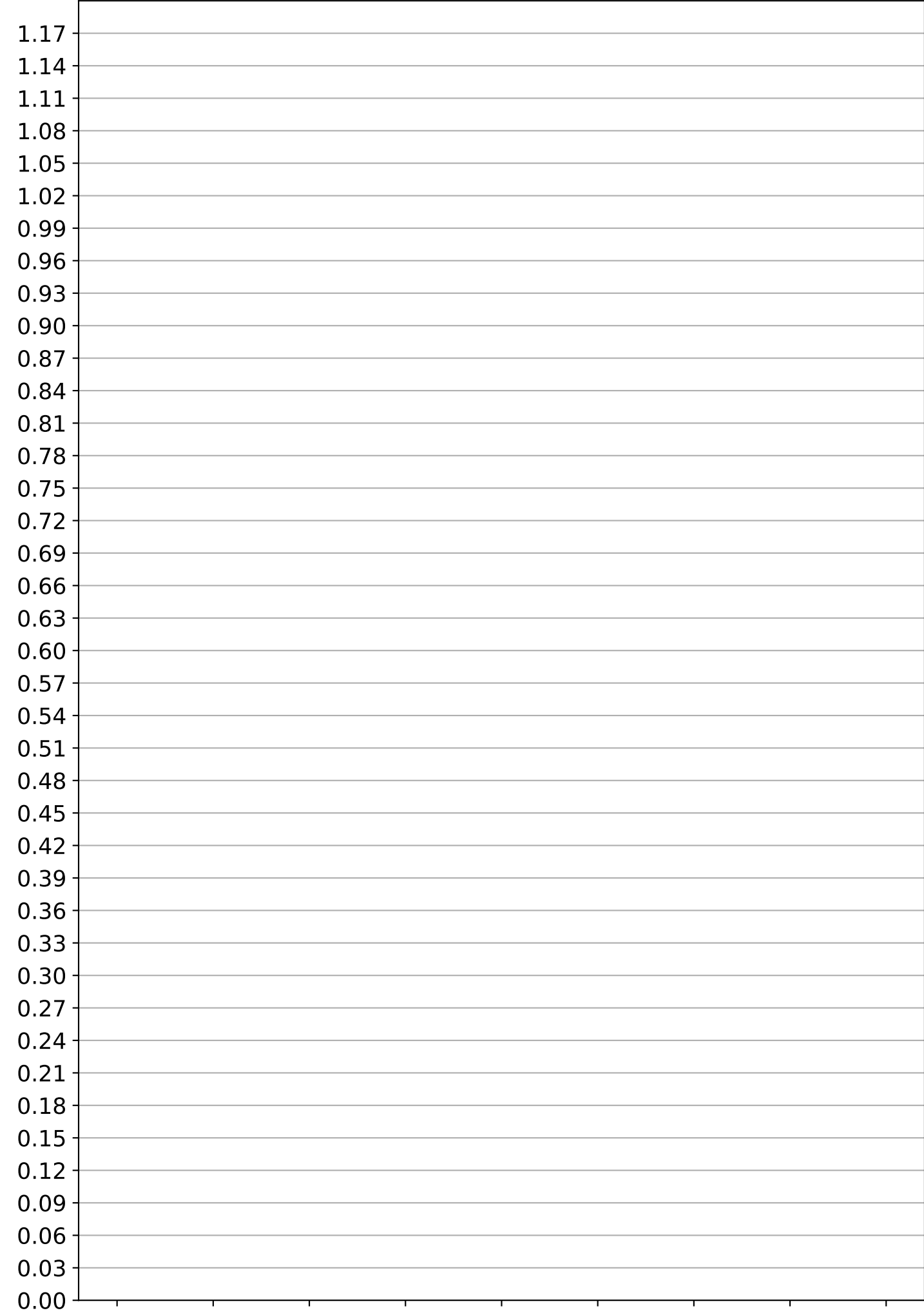


$\{\text{Adam}\{\text{lr}:0.4,\text{b1}:0,\text{b2}:0.8\}\}$ $\{\text{Adam}\{\text{lr}:0.4,\text{b1}:0,\text{b2}:0.9\}\}$ $\{\text{Adam}\{\text{lr}:0.4,\text{b1}:0,\text{b2}:0.999\}\}$
last f:27.22563372232075,gen_err:17.571169727832753 last f:27.37929582492181,gen_err:18.146593043653112 last f:27.519226669171033,gen_err:18.744205288071793



range 0-1.2

last f:18.68701745830853,gen_err:17.559011679483298

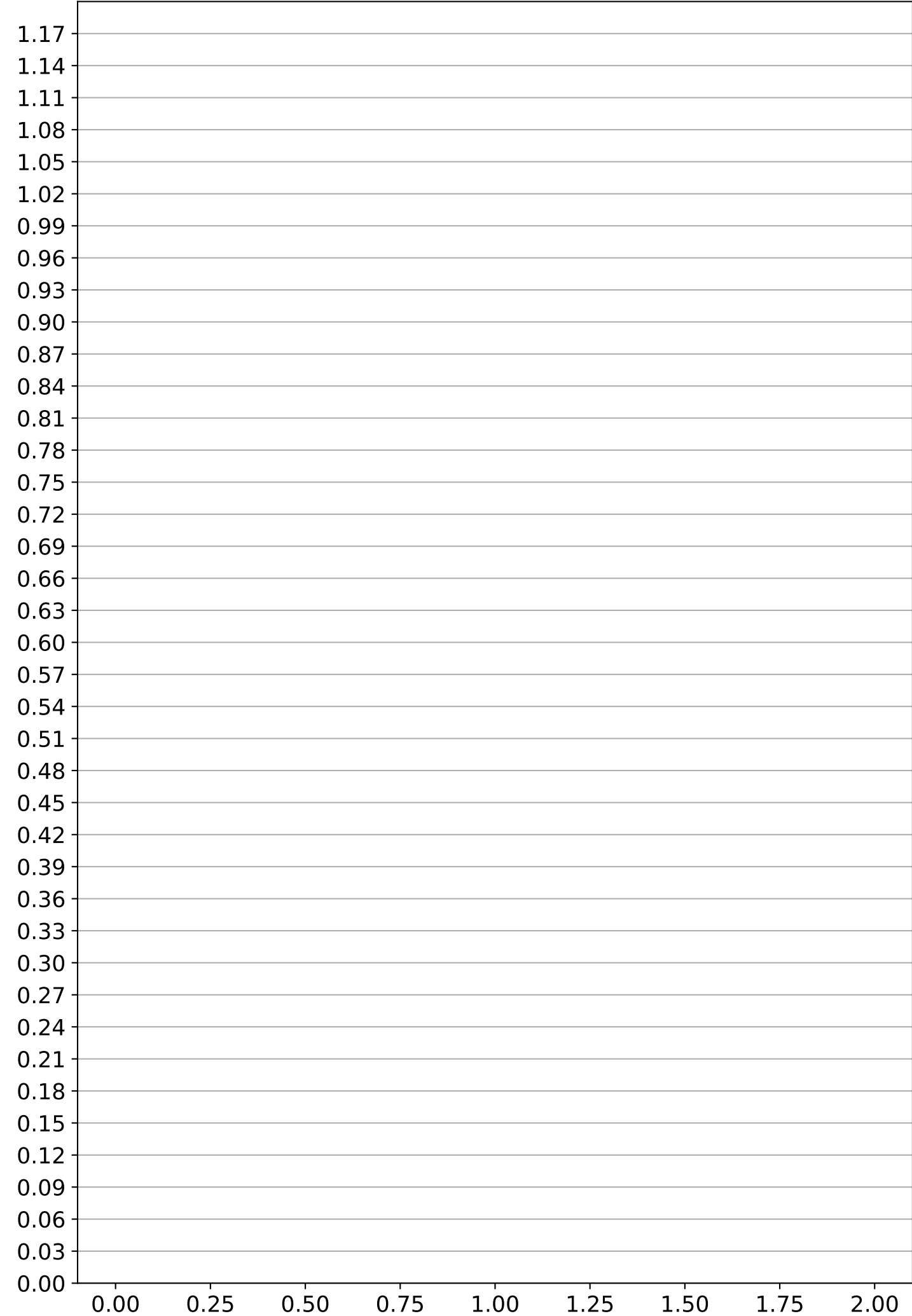


blast_f:18.701776539185957,gen_err:17.537459890013125

last_f:18.709904593448172,gen_err:17.57334999388684



last_f:18.735381356297253,gen_err:17.63600871322069



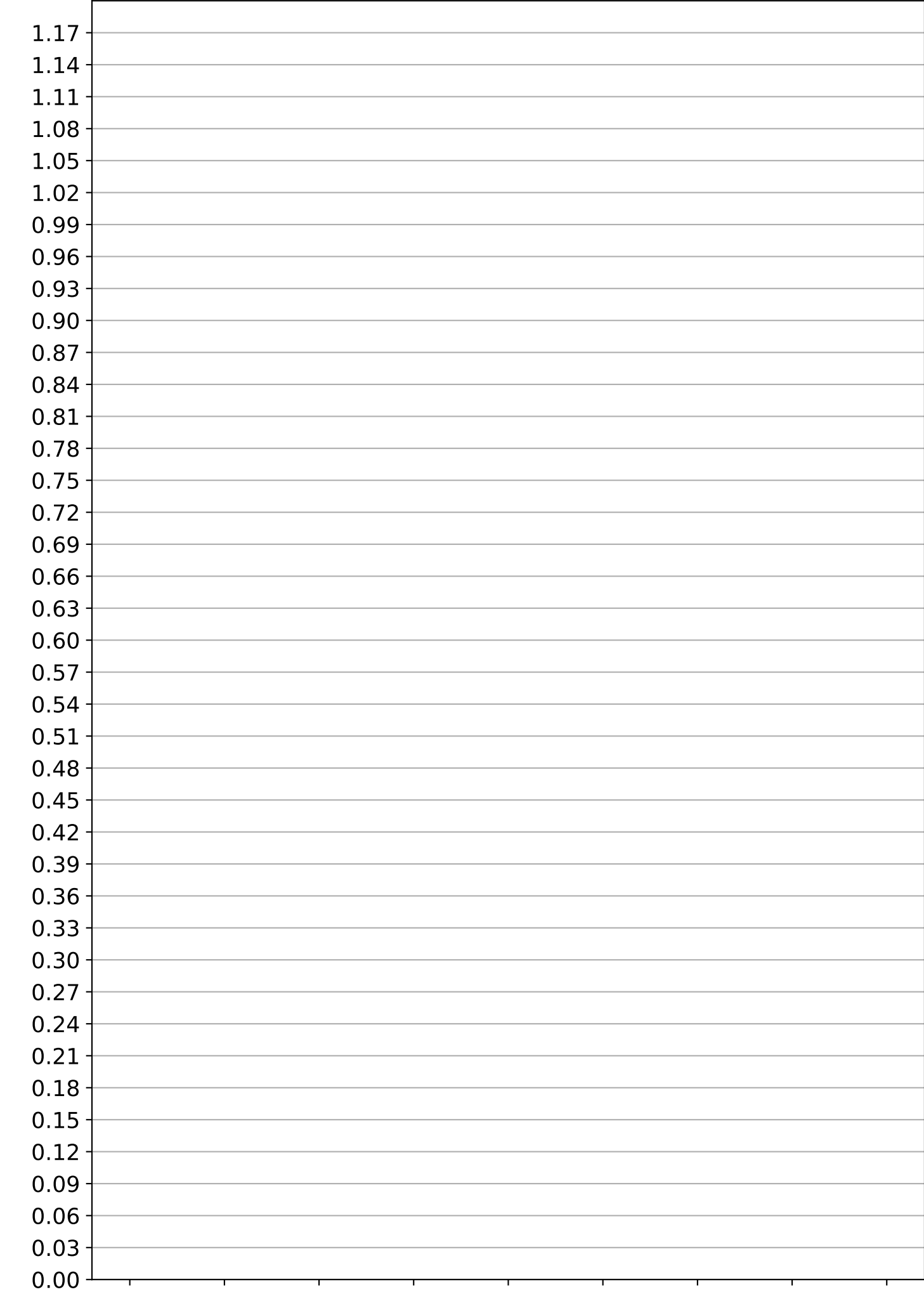
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7last_f:18.73897477685957,gen_err:17.648609021021613
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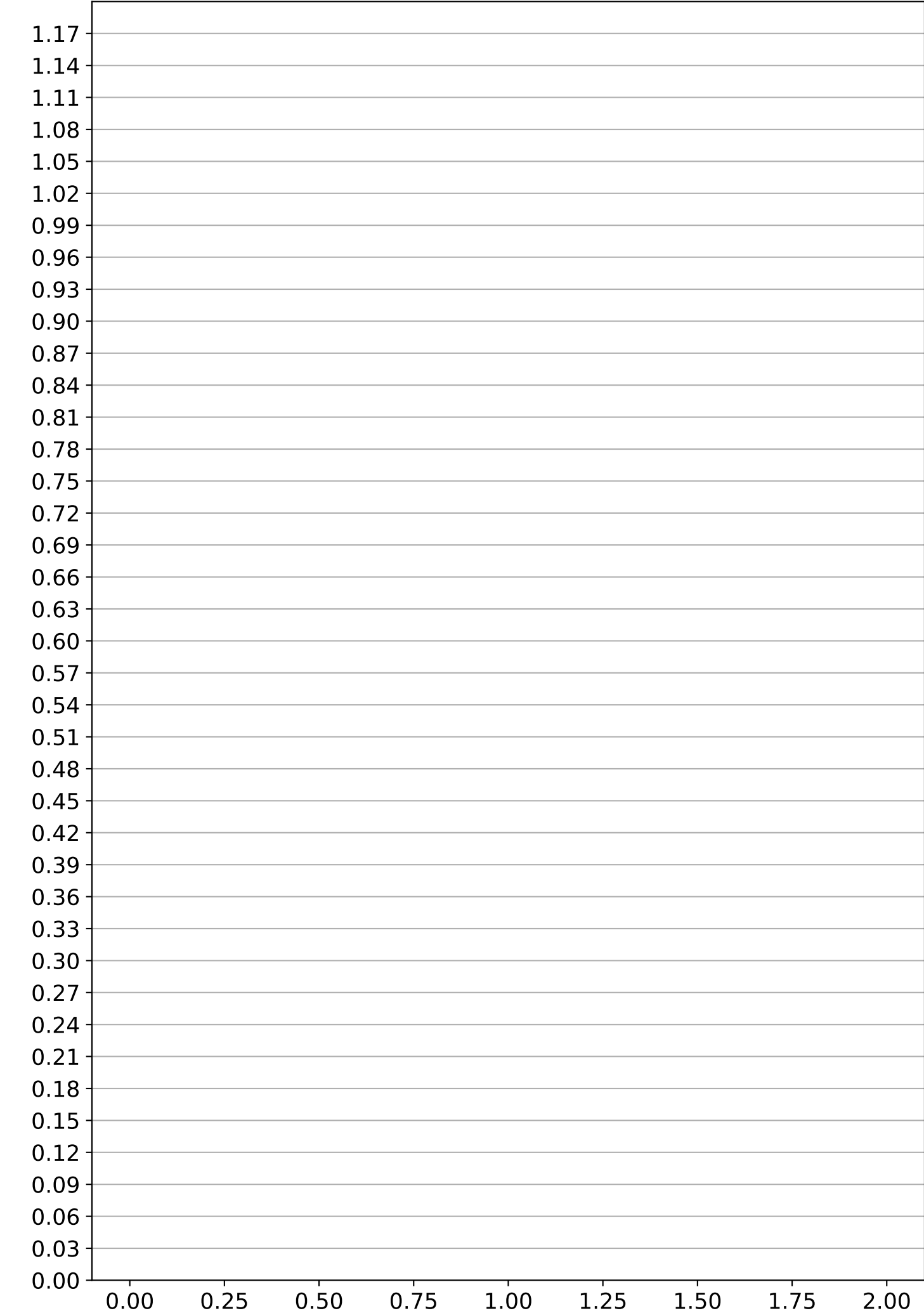
last_f:18.74273722091352,gen_err:17.661223003800067

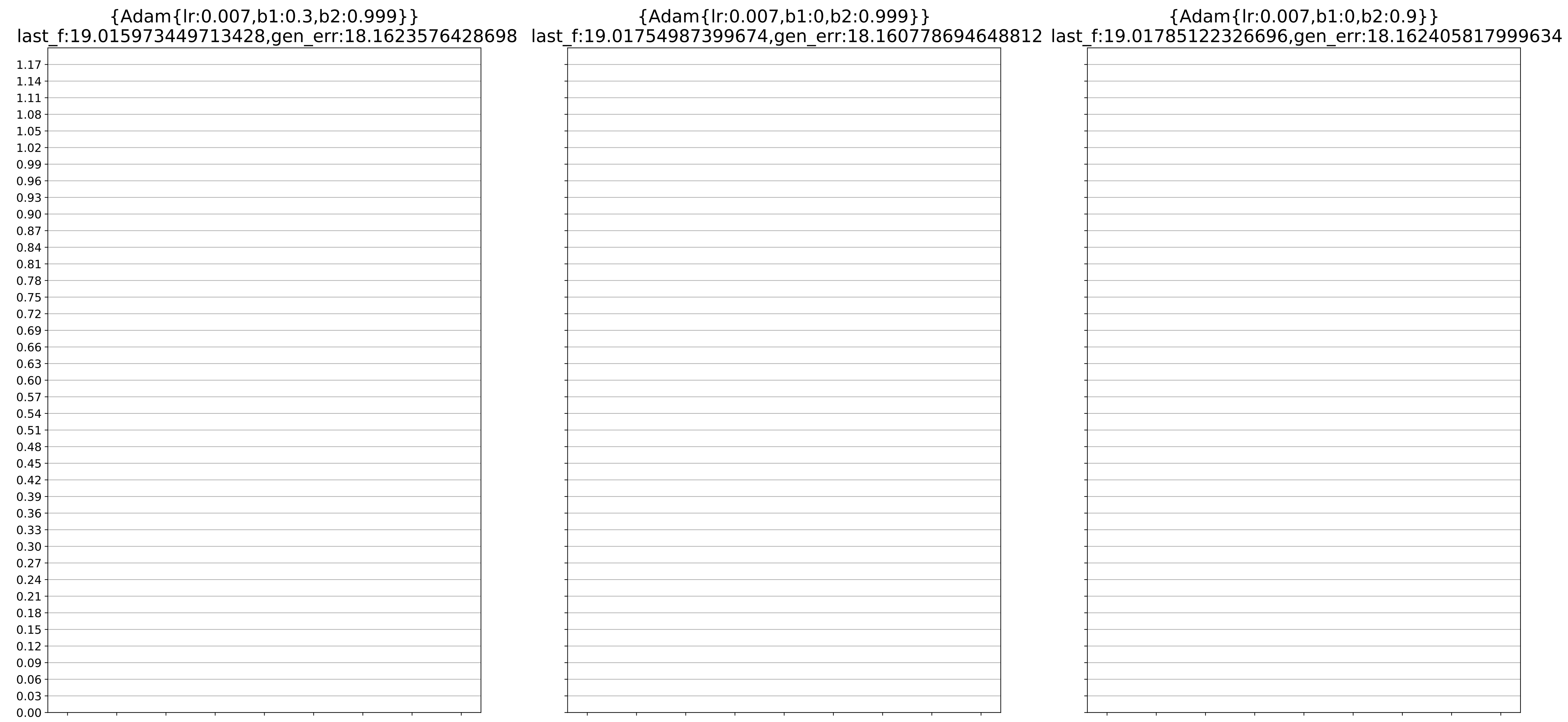


$\{\text{Adam}\{\text{lr}:0.03,\text{b1}:0.6,\text{b2}:0.999\}\}$ $\{\text{Adam}\{\text{lr}:0.03,\text{b1}:0.6,\text{b2}:0.9\}\}$ $\{\text{Adam}\{\text{lr}:0.03,\text{b1}:0.6,\text{b2}:0.8\}\}$
last f:18.761923319242037,gen_err:17.706248691471295 last f:18.76516405781357,gen_err:17.71565715080716 last f:18.768544930782433,gen_err:17.72517751132296

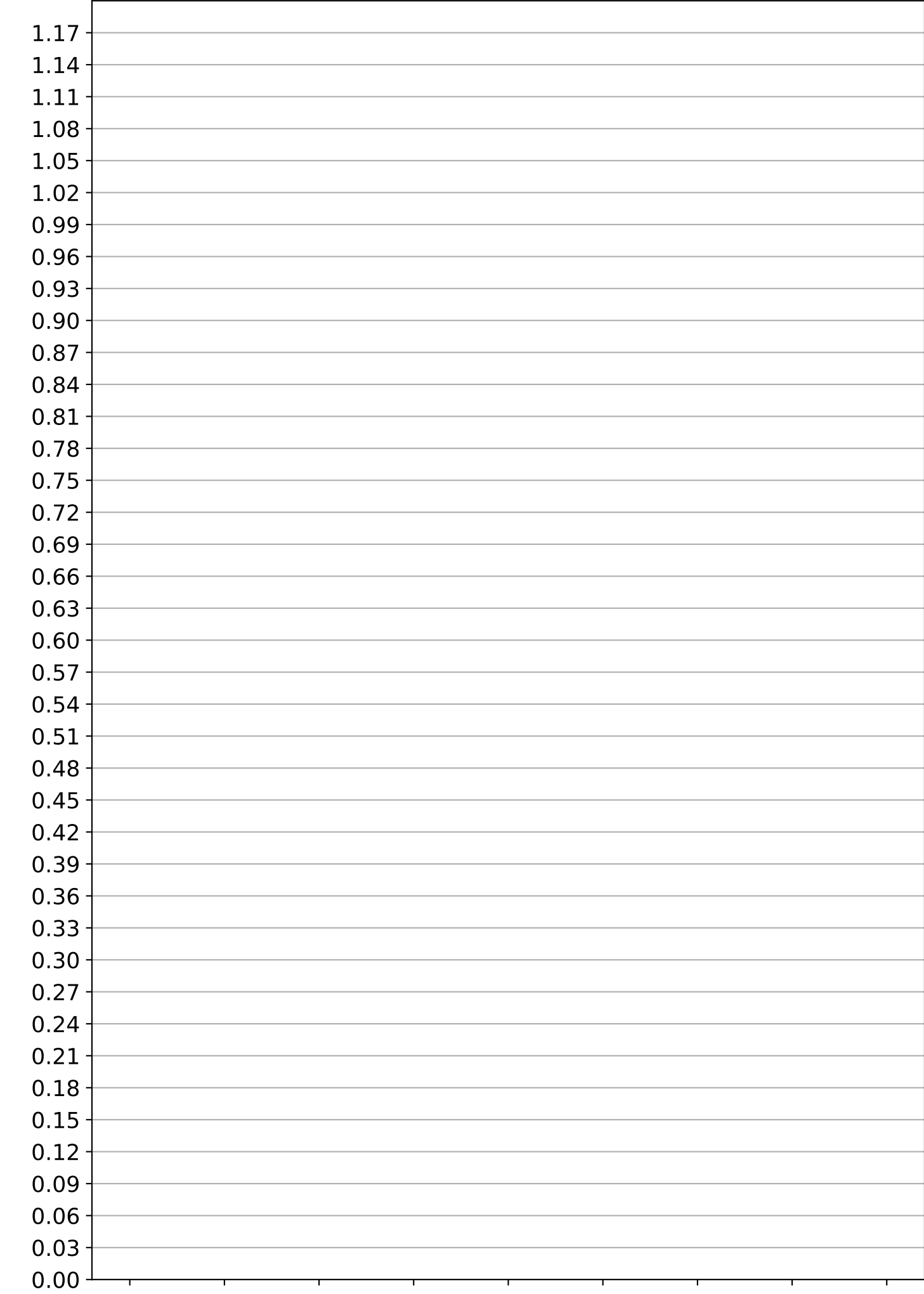


$\{\text{Adam}\{\text{lr}:0.03,\text{b1}:0.9,\text{b2}:0.999\}\}$ $\{\text{Adam}\{\text{lr}:0.03,\text{b1}:0.9,\text{b2}:0.9\}\}$ $\{\text{Adam}\{\text{lr}:0.03,\text{b1}:0.9,\text{b2}:0.8\}\}$
last f:18.78277723325658,gen_err:17.75601768070785 last f:18.78570839249027,gen_err:17.763824177335387 last f:18.788759538878267,gen_err:17.771731477569524

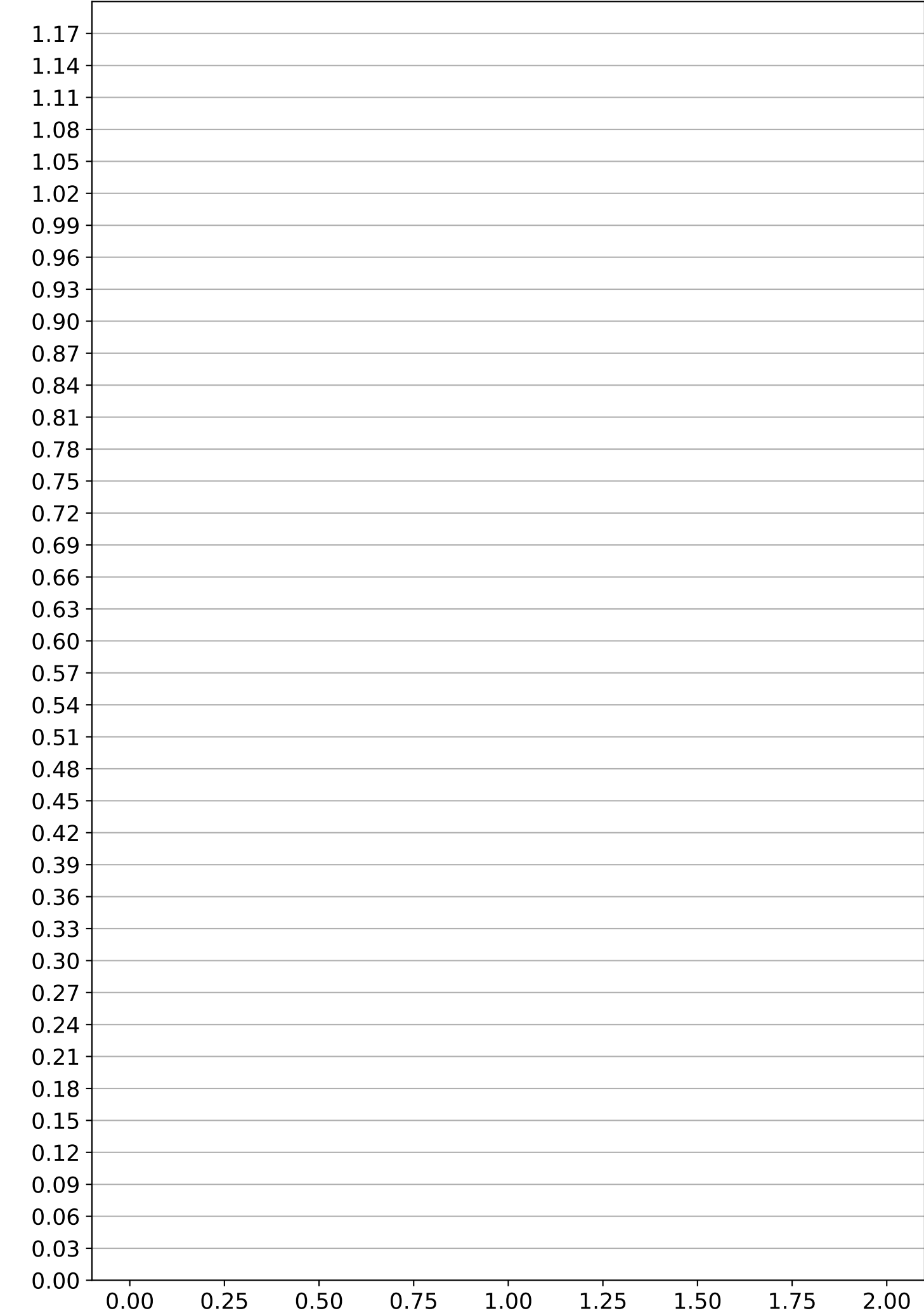




$\{\text{Adam}\{\text{lr}:0.007,\text{b1}:0.3,\text{b2}:0.8\}\}$ $\{\text{Adam}\{\text{lr}:0.007,\text{b1}:0.6,\text{b2}:0.999\}\}$ $\{\text{Adam}\{\text{lr}:0.007,\text{b1}:0.6,\text{b2}:0.8\}\}$
last f:19.021002655128658,gen_err:18.173415070008105 last f:19.022491359418968,gen_err:18.17838471908692 last f:19.02294851414245,gen_err:18.18033772133043



$\{\text{Adam}\{\text{lr}:0.007,\text{b1}:0.9,\text{b2}:0.999\}\}$ $\{\text{Adam}\{\text{lr}:0.007,\text{b1}:0.9,\text{b2}:0.9\}\}$ $\{\text{Adam}\{\text{lr}:0.007,\text{b1}:0.9,\text{b2}:0.8\}\}$
last f:19.02393514931392,gen_err:18.18375848726858 last f:19.024139622406736,gen_err:18.18456620685587 last f:19.024356845084554,gen_err:18.1853969636354



Three empty plots for Adam optimizers with different b_2 values. The y-axis for all plots ranges from 0.00 to 1.17. The x-axis for all plots ranges from 0 to 1000000.

- Plot 1: $\{\text{Adam}\{\text{lr}:0.0007, b_1:0.3, b_2:0.999\}\}$. Last f: 19.066617095086382, gen_err: 18.254192314271.
- Plot 2: $\{\text{Adam}\{\text{lr}:0.0007, b_1:0, b_2:0.999\}\}$. Last f: 19.06785300951097, gen_err: 18.255148601083413.
- Plot 3: $\{\text{Adam}\{\text{lr}:0.0007, b_1:0, b_2:0.9\}\}$. Last f: 19.067853814543547, gen_err: 18.255152437815788.

Three empty plots for Adam optimizers with different parameters. The y-axis for all plots ranges from 0.00 to 1.17 with increments of 0.03. The x-axis for all plots ranges from 0.00 to 2.00 with increments of 0.25.

- Plot 1: $\{\text{Adam}\{\text{lr}:0.0007, \text{b1}:0, \text{b2}:0.8\}\}$ last f:19.06785465418696, gen_err:18.255156700092982
- Plot 2: $\{\text{Adam}\{\text{lr}:0.0007, \text{b1}:0.3, \text{b2}:0.9\}\}$ last f:19.06786060422359, gen_err:18.25518116735495
- Plot 3: $\{\text{Adam}\{\text{lr}:0.0007, \text{b1}:0.3, \text{b2}:0.8\}\}$ last f:19.067861293745107, gen_err:18.255184576631198

{Adam{lr:0.4,b1:0.9,b2:0.999}}

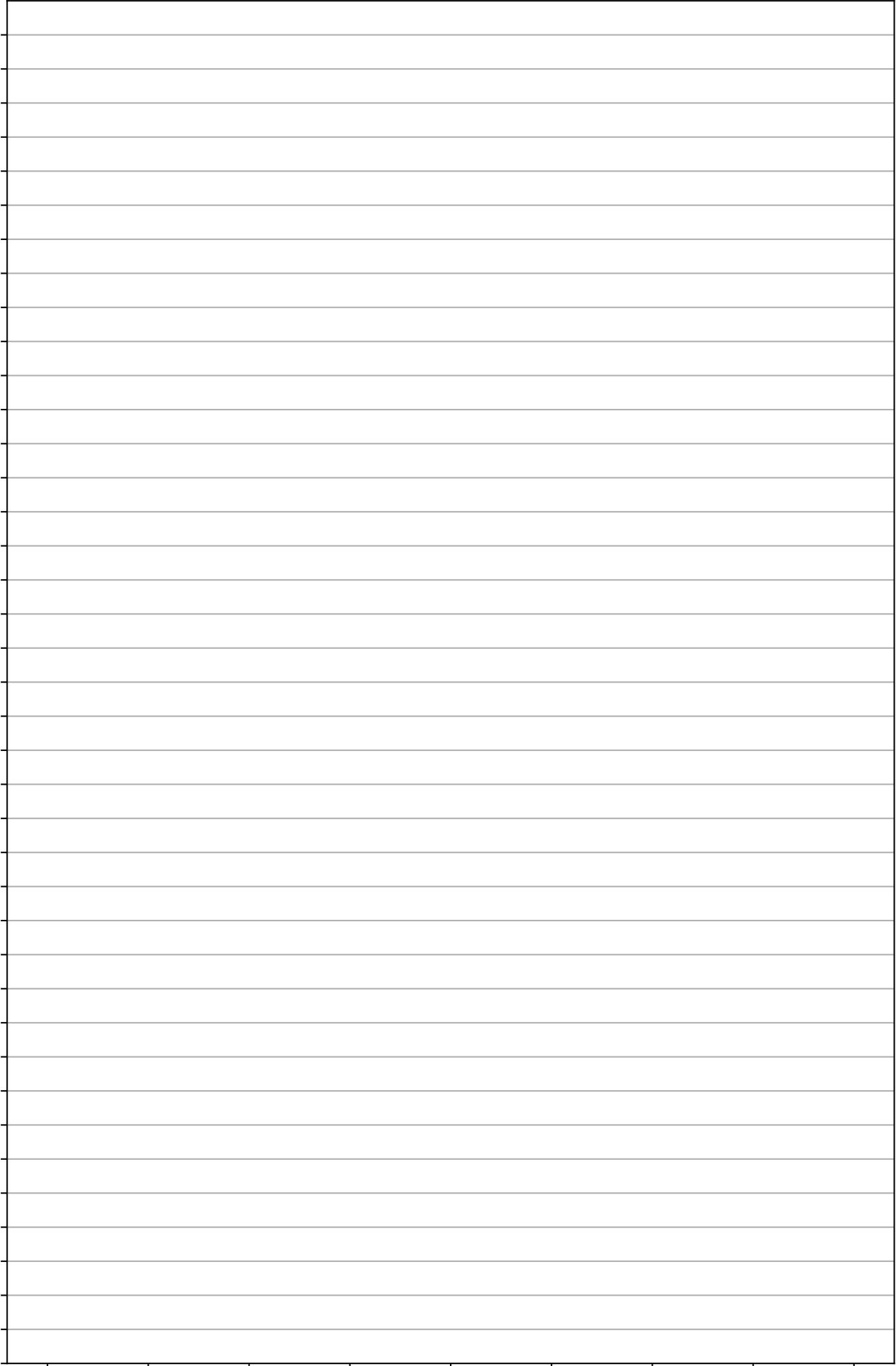
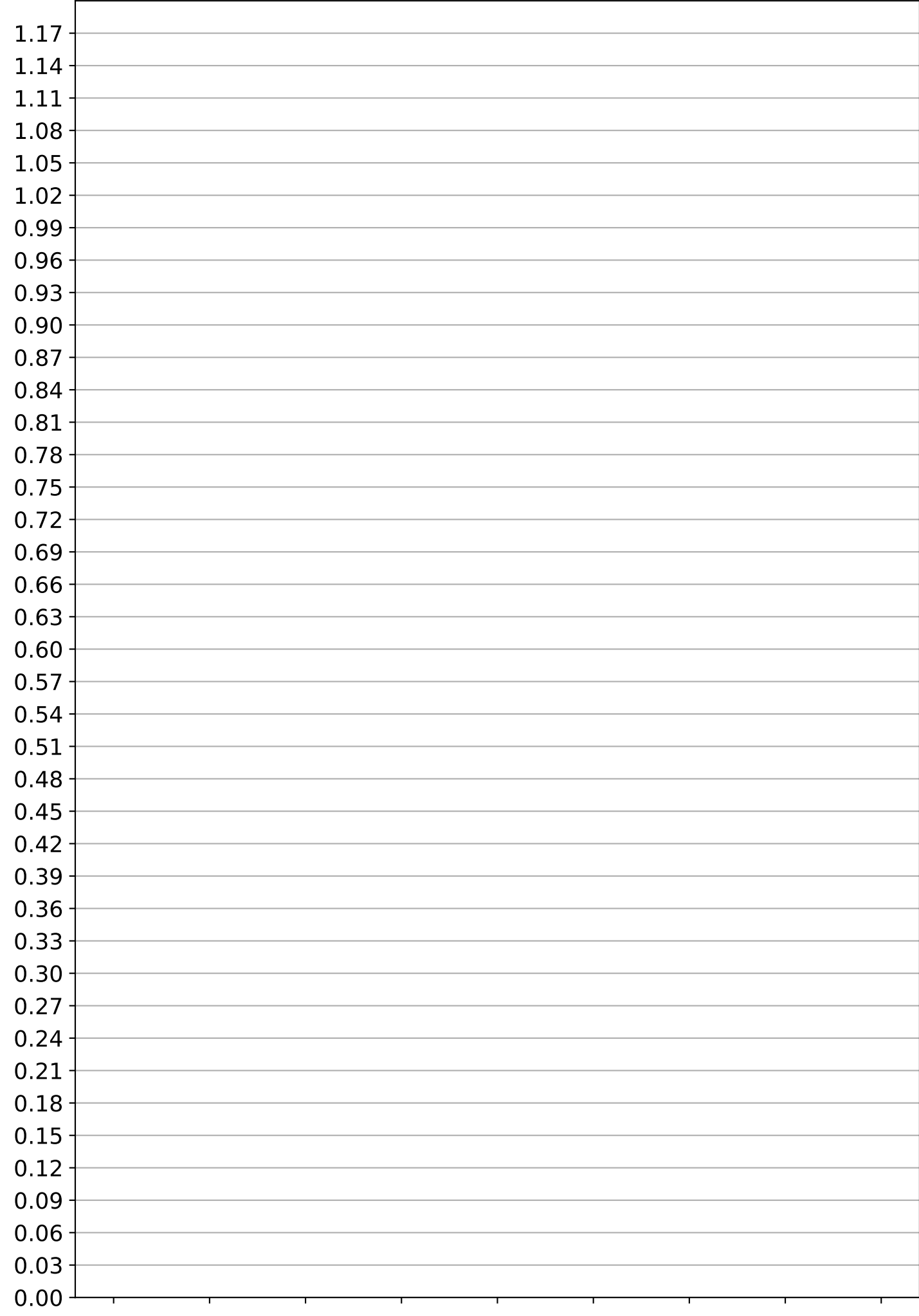
last f:21.88477940154285,gen_err:16.735484391301533

{Adam{lr:0.4,b1:0.9,b2:0.8}}

last f:22.205669871120154,gen_err:16.284641500377766

{Adam{lr:0.4,b1:0.9,b2:0.9}}

last f:22.471440464989044,gen_err:16.224093414198826



{Adam{lr:0.4,b1:0.6,b2:0.8}}

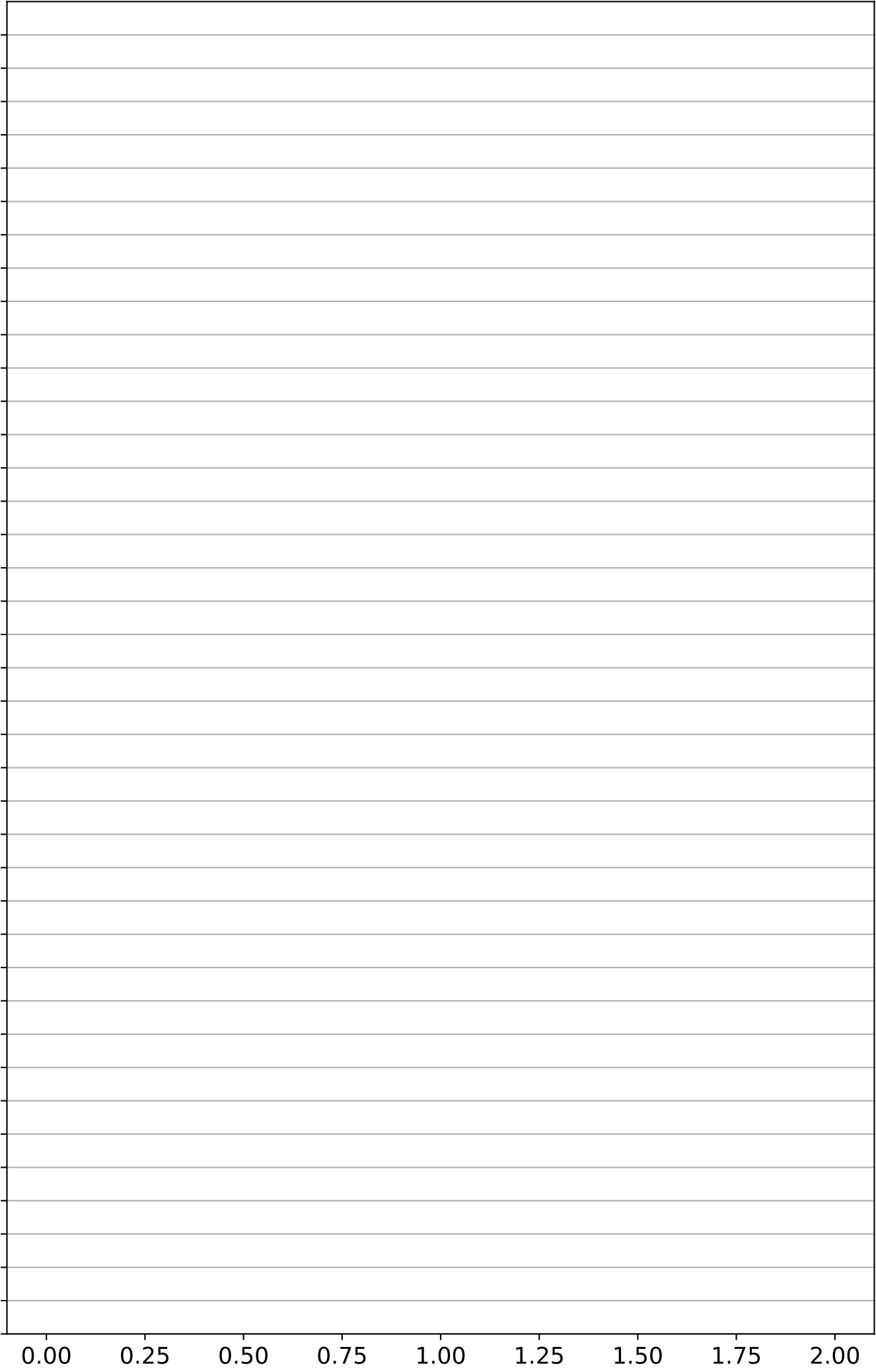
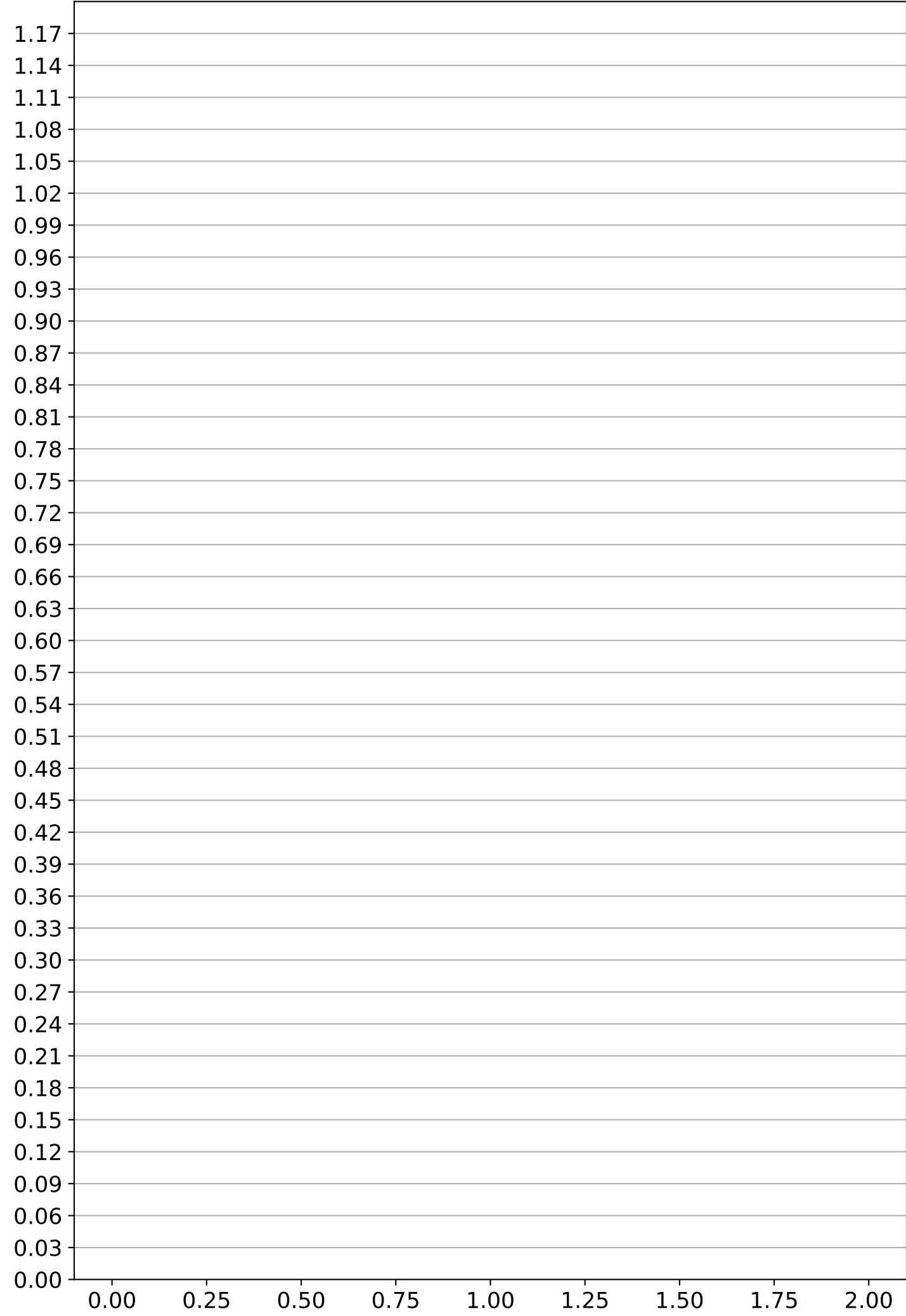
last f:23.972585796825513,gen_err:15.24654317991033

{Adam{lr:0.4,b1:0.6,b2:0.9}}

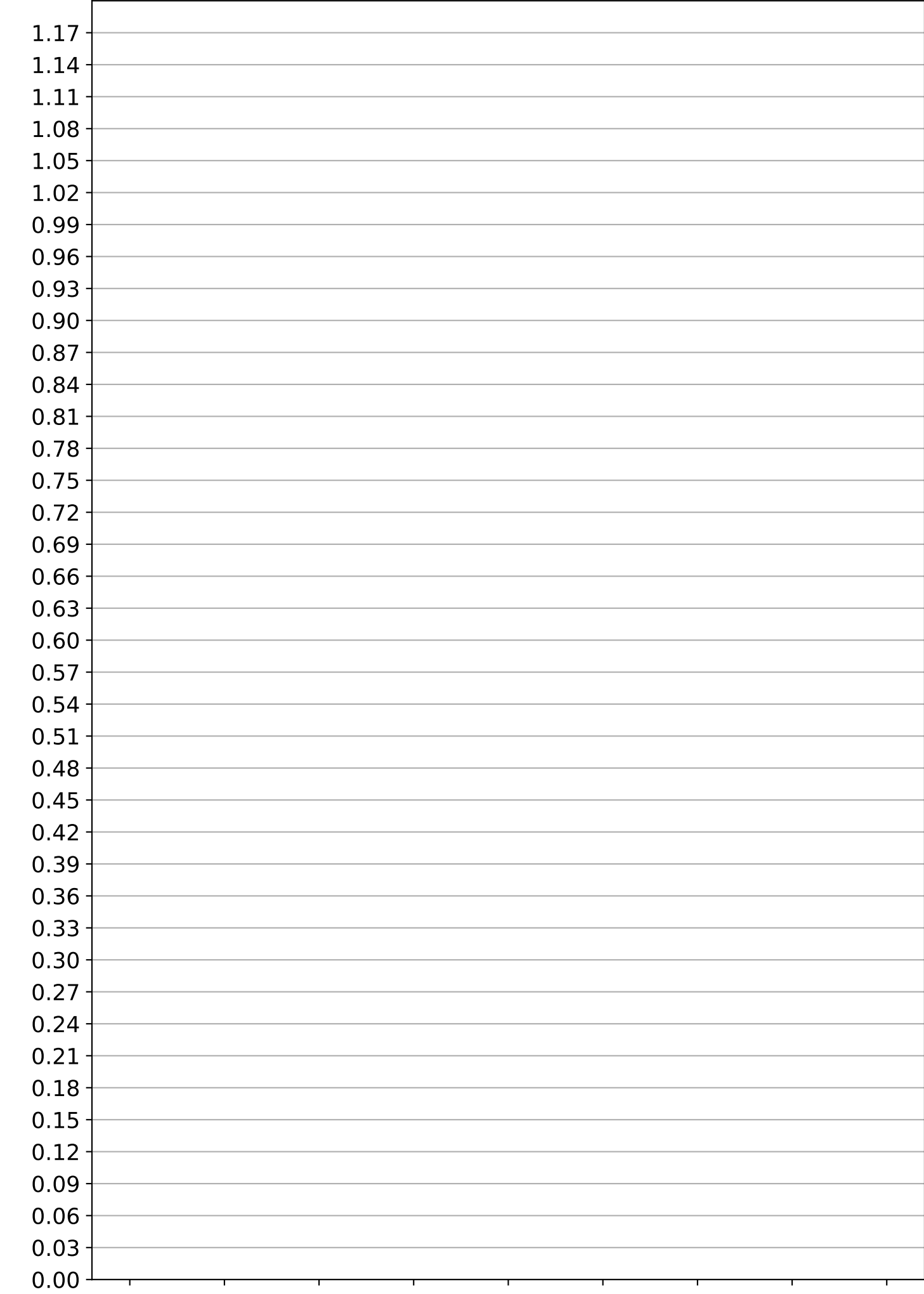
last f:24.268745784871427,gen_err:15.202067504206507

{Adam{lr:0.4,b1:0.6,b2:0.999}}

last f:24.55022409432258,gen_err:15.17580853017433



$\{\text{Adam}\{\text{lr}:0.4,\text{b1}:0.3,\text{b2}:0.8\}\}$ $\{\text{Adam}\{\text{lr}:0.4,\text{b1}:0.3,\text{b2}:0.9\}\}$ $\{\text{Adam}\{\text{lr}:0.4,\text{b1}:0.3,\text{b2}:0.999\}\}$
last f:26.034659911667845,gen_err:13.757111701815134 last f:26.30795822860747,gen_err:13.906218985186218 last f:26.562336154079823,gen_err:14.110829512382473



$\{\text{Adam}\{\text{lr}:0.4,\text{b1}:0,\text{b2}:0.8\}\}$ $\{\text{Adam}\{\text{lr}:0.4,\text{b1}:0,\text{b2}:0.9\}\}$ $\{\text{Adam}\{\text{lr}:0.4,\text{b1}:0,\text{b2}:0.999\}\}$
last f:27.22563372232075,gen_err:17.571169727832753 last f:27.37929582492181,gen_err:18.146593043653112 last f:27.519226669171033,gen_err:18.744205288071793

