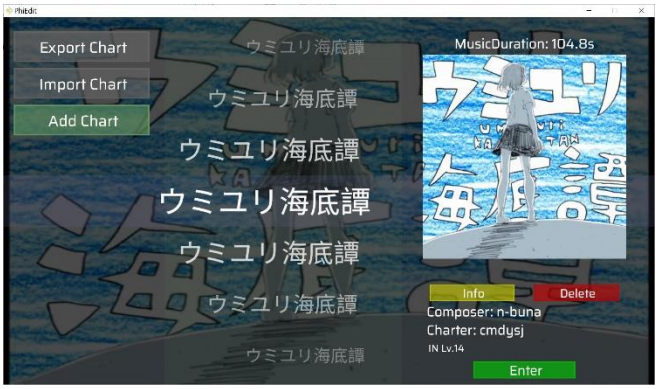
Re:PhiEdit Instructions v1.1-P1 Public

1. Preparation

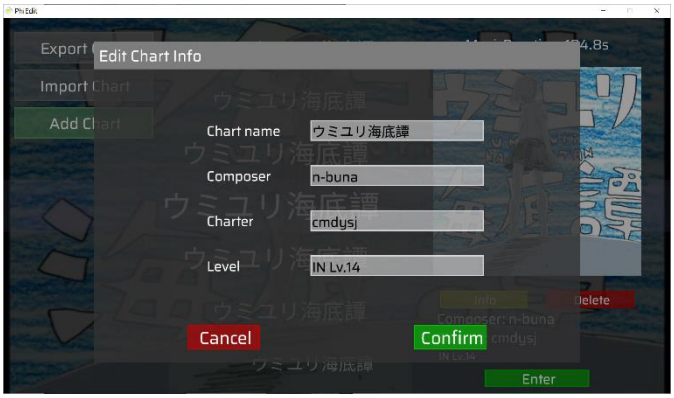
Run PhiEdit.exe



Use mouse wheel to switch current song

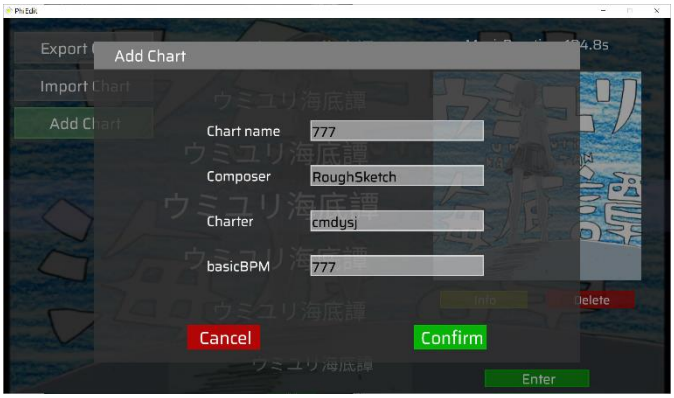
Click “Export Chart” to export a .pez format file to /Resources folder, “Import Chart” can be used to import .pez to PhiEdit

Click “Info” to edit chart information，”Delete” removes the current chart



Click “Add Chart”，select music file (.mp3/.wav/.ogg) and illustration (.jpg/.jpeg/.png)

Enter information, click “Confirm” (basicBPM means BPM to the beginning part of music)



Click “Enter” to start charting (If it crushed， read “FAQ”)

PS： Please install all fonts under /Resources/fonts

2.Basic

First of all, in rpe, almost every time data (exception: visible time) is recorded in the format of “a:b/c”, which means a+(b/c) beats. For example, 2:3/4 means 2+(3/4)=2.75 beats.

Each chart has a BPM list, from which we get the conversion between beats and seconds.

A chart is consists of a number of **lines** (judgment lines), each of which has a number of **notes** and a number of **events**, notes move in a direction perpendicular to the lines, and hit the line at specified moment. Events are divided into several categories, and each line executes the events under each type of event in chronological order. Events may affect the position, angle, alpha(transparency), and base speed of the line, etc.

By default, the coordinates of the visible window are X:[-675,675],Y:[-450,450], (0,0) is the center of the screen.

The position state of the judgment line is determined by the **position** of its anchor point and its **angle**, which can be understood as a ray determined by a point and an angle, and extended in the opposite direction to form a "straight line".

The basic properties of the judgment line also include its **alpha**(transparency) and **base speed**, with alpha ranging from 0 (completely transparent) to 255 (completely opaque) and base speed as any decimal (can be a non-positive number).

As rpe’s unique features, the judgment line also has X and Y scaling properties, color properties, brush properties ,text properties and incline properties. This content will be described at the end of instructions.

To be clear, the purpose of placing events is to change the values of the properties of the lines.

There are four types of notes, including Tap, Drag , Flick, and Hold
For all notes, they contain the following properties:
Start time: fraction a:b/c, indicating the moment when the note falls on the line it belongs to, Hold note also contains an end time
X coordinate: floating point X, |X| represents the Euclidean distance between the note's fall position and the anchor point of the line, positive or negative determines whether the fall point is on the line’s ray or on the reverse extension line
Side: Up or Down, Up means the note falls from the half-plane pointed by the 90° counterclockwise rotation of the line’s ray, Down means the note falls from the half-plane pointed by the 90° clockwise rotation of the ray
Speed: floating point v, the actual speed of the note is determined by v*[base speed of the line it belongs to at that moment], a actual speed of 10.0 means the note moves 10.0*120=1200 pixels per second, which means it will cross the whole screen vertically in (900/1200)=0.75 seconds
Y value offset: floating point Y, the value is usually 0; if modified to Y, it means the note will be judged at a vertical distance of Y from the line it belongs to.
True value: divided into Real and Fake, Fake means the note is a fake note, fake notes do not have hit effects and sound effects, and will not be counted in combo or score calculation while playing
Width: usually 1.0, changing it makes the note horizontal shortening or elongation

Visible time: floating point T, the note will be visible for T seconds before it is judged
Alpha: an integer from 0 to 255, indicating the transparency of the note

Events are divided into ordinary events and special events, and only ordinary events are introduced below
Ordinary events are divided into five types: MoveX, MoveY, Rotate, Alpha, and Speed.
MoveX→judgment line anchor point X-axis movement event, MoveY→judgment line anchor point Y-axis movement event
Rotate→Rotate event, Alpha→Transparency change event, Speed→Base speed change event

Each event consists of a **start time**, an **end time**, a **start value** (head), an **end value** (tail) and an **easing type**
The head and tail vary depending on the type of event, MoveX/Y head and tail are floating point numbers for X/Y coordinate values, the Rotate head and tail are floating point numbers for angles (degree system), the Alpha head and tail are integers for transparency values, and the Speed head and tail are floating point numbers for speed values.

The easing types (easing) are labeled from 1 to 28, corresponding to linear+{In/Out/InOut}*{Sine/Quad/Cubic...}
linear means linear movement, “In” prefix means deceleration change, “Out” prefix means acceleration change, “InOut” means deceleration change followed by acceleration change; “Sine” suffix means sinusoidal, “Quad” is quadratic, ..., bigger numbered suffix usually has steeper change curve

For example, if there is MoveX: Start 0:0/1 End 2:1/2 Head -200, Tail 0 Easing 2(OutSine)
The X coordinate of line will be set to -200 at the moment of 0 beat, then changes to 0 in a sinusoidal deceleration until 2.5 beats.

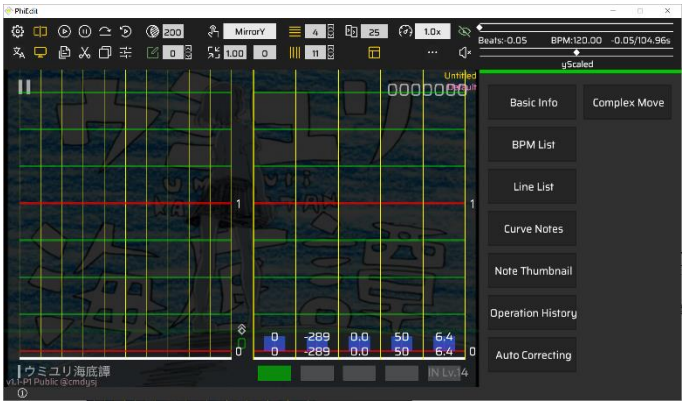
In addition, each event also has a **lock** property, if the lock property is true, then the head and tail will always keep equal, meaning only the moment when the time goes to its head the event plays an actual role, i.e. a transient event

Binding Group property has been added to events. This property defaults to 0, which means that they do not belong to any group; events with the same binding group value belong to the same group, and their head, tail and easing will always keep the same, modifying one of them will modify all the events in the group at the same time

In v1.1 update, in addition to being determined by easing type, you are also able to adjust the position of the left and right endpoints to cut and use a part of curve from basic easing curves.

3.Information and BPM

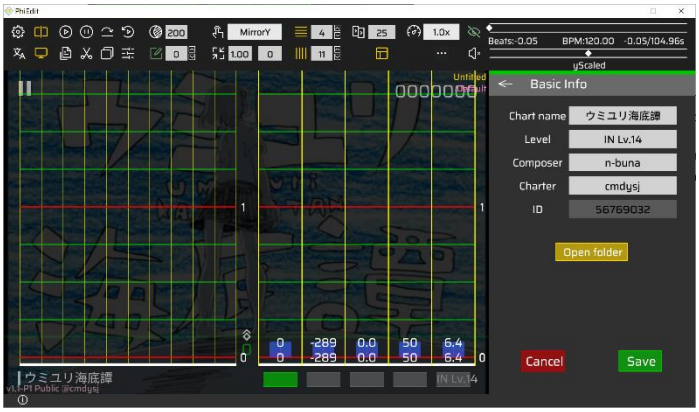
After clicking “Enter” in the selection window, the following interface will appear



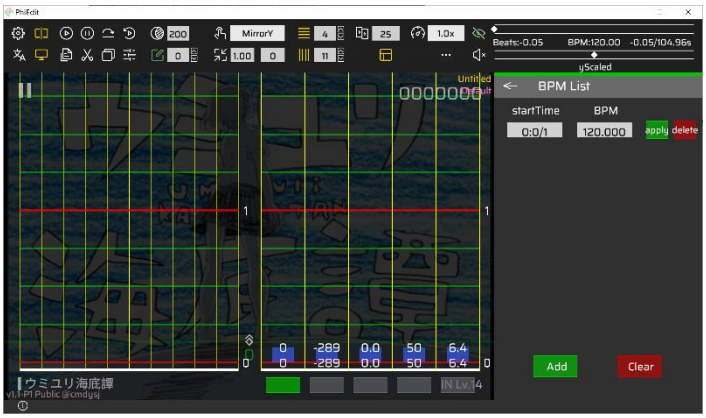
Click on the "Basic Info" button, where you can edit the chart name, difficulty (like IN Lv.14), composer and charter. The ID is a string of numbers and is not editable, corresponding to the name of the chart folder under /Resources, where the chart file, illustration and music are placed.

Click "Cancel" to discard unsaved edits, "Save" to save the edits

Click "Open Folder" to open the folder where the chart file is located.



Click on the arrow to the left of "Basic Info" or press Esc to return to main menu, next click on the "BPM List", the following interface will appear



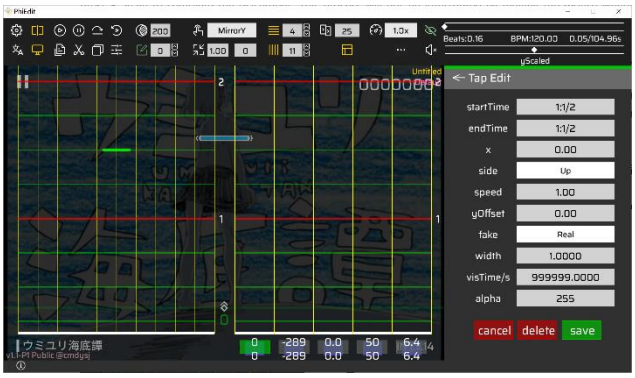
You can add, edit, delete or clear BPM items in this interface, and **use the up and down arrow keys** to move through the list.

4. Place and edit notes, interface introduction

Move the mouse to the left half part of the editing window and press Q to place a Tap note, press W/E/R to place Drag/Flick/Hold notes. For Hold notes, you need to press R, then move the mouse to the end place of Hold, and press R again to complete the placement. This process will not be interrupted by moving the mouse wheel or progress bar, you can use Esc to exit placement.

Horizontal lines (4 in the picture) determines the number of pieces each beat is divided into, as shown in the picture, the note is attached to the 1:1/2 horizontal line. Also, if "vertical lines" is enabled (the vertical lines button is yellow), then the placed notes will be automatically attached to the nearest vertical line. If you turn off the vertical line, the X coordinate of the note can be placed freely, but even if you turn off the horizontal line, the horizontal lines are just invisible, and the note will still be attached to the nearest horizontal line.

When you put down a note, the software will automatically select it for you, or you can edit one by clicking it



See Chapter 2 for the meaning of editable content. The white rectangle is a drop-down list, which will expand when you click it. If you do not enable the "Autoapply certain edit" option, you need to click Save or press Enter to perform the changes; click Cancel to restore the unsaved edits; click Delete key, press Delete, or press the right mouse button while holding down the D key to delete the note. Click the arrow or Esc key to exit editing

Quick editing: Press A key to invert X coordinate, S key to flip the side
Notes can be dragged. Hold down the Z key, click on a note and you can drag it with the left mouse button, and for Hold notes, drag it with the right mouse button to change its end time and coordinates

If at some point you only want to edit notes without events, you can click View Switch button  (second from the left in the first row) to switch between the note only editing mode and the co-editing mode, or using Alt+N

Next is the introduction of the toolbar above:

There are two progress bars on the right side of the toolbar, the second one (written "yScaled") controls the vertical length of each beat; the first one controls the global time, the diamond in the progress bar moves to the right as the music plays, you can change the global time by dragging the diamond or clicking a position of the progress bar. There shows the current Beats, BPM, real time/total time (in seconds) at the bottom of the first progress bar

Press the space bar to start or pause the flow of global time, use the mouse wheel to adjust the global time, use the hotkey CTRL+H to attach the global time to the nearest horizontal line, hold down the Alt key and use the mouse wheel to quickly adjust global time

The components in the first row from left to right are: Settings, View Switch, Play, Stop, Leap, Replay, Sub-transparency, Execute List, Horizontal Line, Offset, Playback speed, Hide components

The components in the second row from left to right are: switch language, show real-time preview, copy, cut, paste, default note, current line, vision, vertical line, show in-game UI, more tools, mute other lines

Offset and Playback speed: Offset text box edit the offset of chart and music in milliseconds, when you put down the first note (preferably on the red horizontal line), you need to adjust offset precisely until the first sound you picked in music is aligned with the hit sound of the note; the Playback speed is a drop-down list, when you click it, options 1.0x, 0.75x, 0.5x will appear, which represent playing music at three speeds respectively. Playback speed hotkeys are CTRL+J, CTRL+K, CTRL+L

"Horizontal lines" and "vertical lines": you may change the number of these lines, click the yellow button to turn off or on the horizontal and vertical lines; the leftmost vertical line has a horizontal coordinate of -675, the rightmost one is +675, and the rest are equally spaced, which means that if the number of vertical lines is odd, the middlemost one will be 0.

"current line" refers to the number of the currently editing judgment line, which is numbered from 0. When you click on a line number, a text box will appear in which you can enter a series of numbers separated by spaces, then the event curves and notes of these lines will be displayed additionally in the editing window, entering -1 means that all lines should be displayed additionally.

There are five ways to switch between judgment lines: edit the “current line” text box; use hotkey Alt+1; hold down CTRL and use the mouse wheel (commonly used); click the corresponding button in Line List; hold down the CTRL key and enter the number of the line


"Play Stop Leap Replay": click Play or press I to switch the edit window to the play window and start playing the actual effect of the chart, then click Stop or press O to stop the playback and restore the global time to the starting position of the playback, click Leap or press P to stop the playback and not restore the global time; press

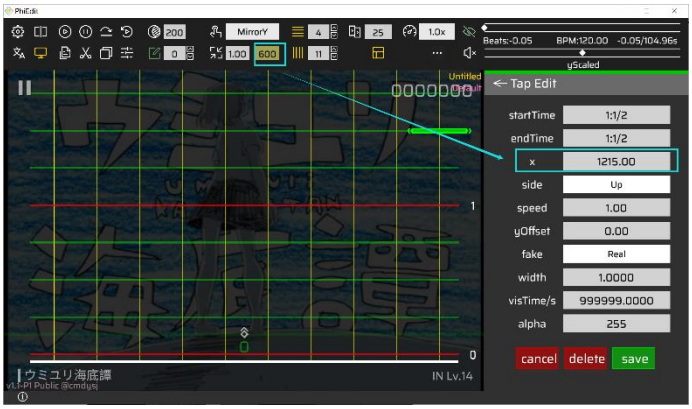
Preview or the [key to start playback from the beginning, and of course, you can use the separate preview window if you want to record the chart (see Chapter 6).

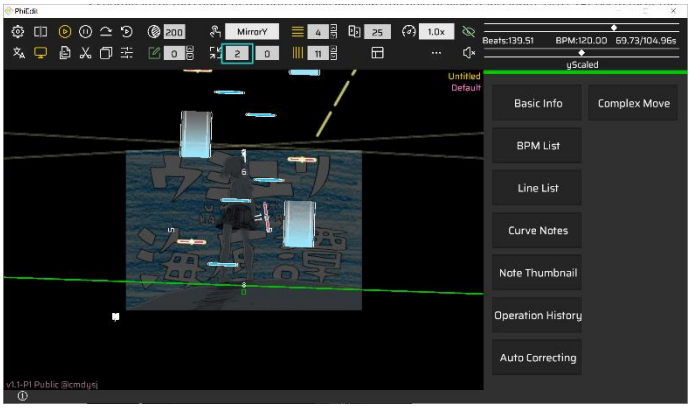
Press and hold the T key (**commonly used**) to switch to the playback window and start playing, release it to restore to the starting time; press and hold the U key to start playing and release without restoring

 " show real-time preview " button (on by default) will make the real-time effect of the chart to be displayed behind the editing window with a certain transparency, which can be modified in Settings – General

 "Sub-transparency" shows how much that lines other than the edited line and the notes on them will be transparent, the value range [0,255]. Specially, if the sub-transparent is a negative number -X (X>0), then it is equivalent to sub-transparent X and all lines are forced to be transparent 255 (completely opaque)

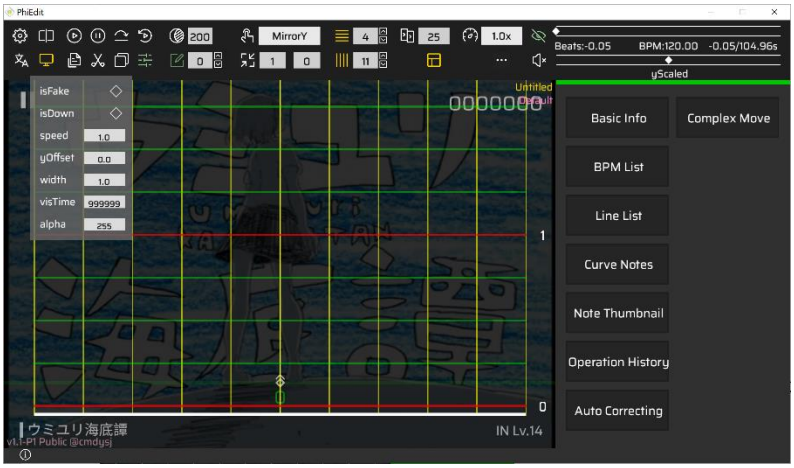
 “vision” has two edit boxes. The first one is the scale of the field of view, and the second one is the X coordinate of the center of the note editing window (the field of view translation). Use CTRL+M to reset the translation to 0





Press  at the bottom to show chart status

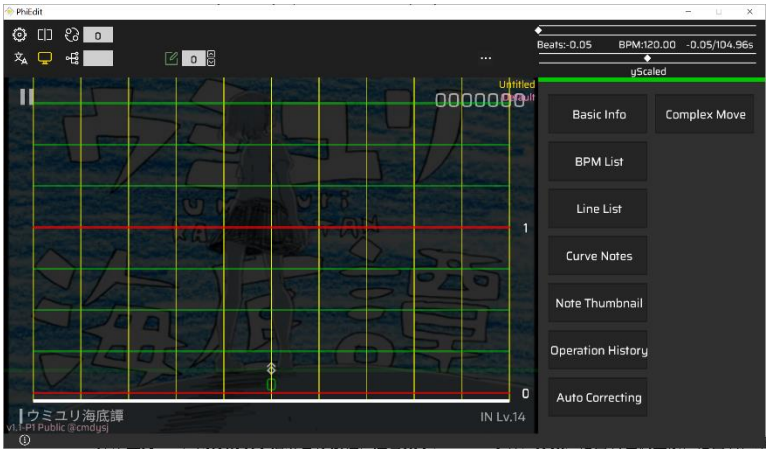
Content in newer Versions (You should read through the entire instructions before reading this section) :



Click  to modify default properties of the note you placed.

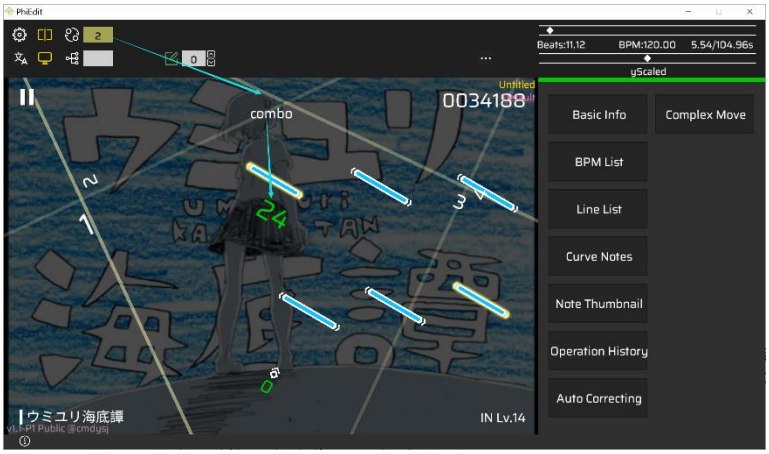
Click  to hide most of the UI components.

 will mute the other lines' sound effects,  turns on or off the display of the in-game UI (score, combo, etc.),  shows more tools after clicking



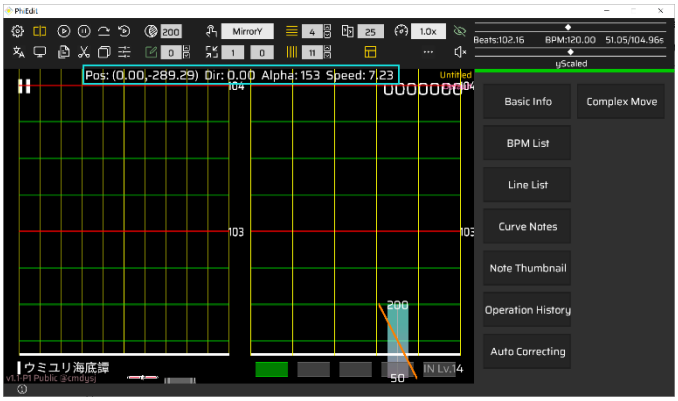
Here,  indicates the UI component bundled with this line, default by 0, which means nothing is bundled

If it is set to an integer between 1~7, then it means one of the seven UI components is bundled: pause button, combo number, combo label, score, vertical bar, score name, difficulty. The line itself is not displayed, and the coordinates of the bundled UI component equal to its original coordinates plus coordinates of this line. The angle, transparency, XY scaling, color of that UI will keep same with that of the line.



 represents the "parent line" property, which is empty (or -1) by default. When set to i, it will always inherit the XY coordinates from line i and superimpose its own coordinates. This process is recursive, for example, if the parent of line 2 is 1 and the parent of line 1 is 0, then the coordinates are updated in the order of 0→1→2, inheriting and superimposing their own coordinates in turn.

Press the TAB key to show/hide the properties of the current front line in the edit window

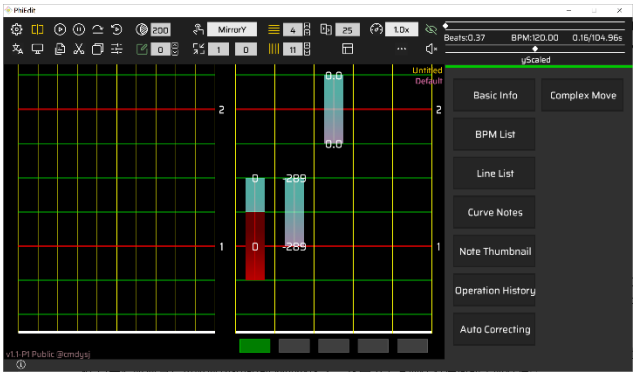


The name of the judgment line and its group are displayed in the upper right corner of the editing window, and can be edited in "Line List".

5. Place and edit events

Move the mouse to the right half part of the editing window, press the R key at the beginning of the event like placing a Hold, move the mouse to the end position, press the R key again, and an event is placed, press Esc key to exit the process

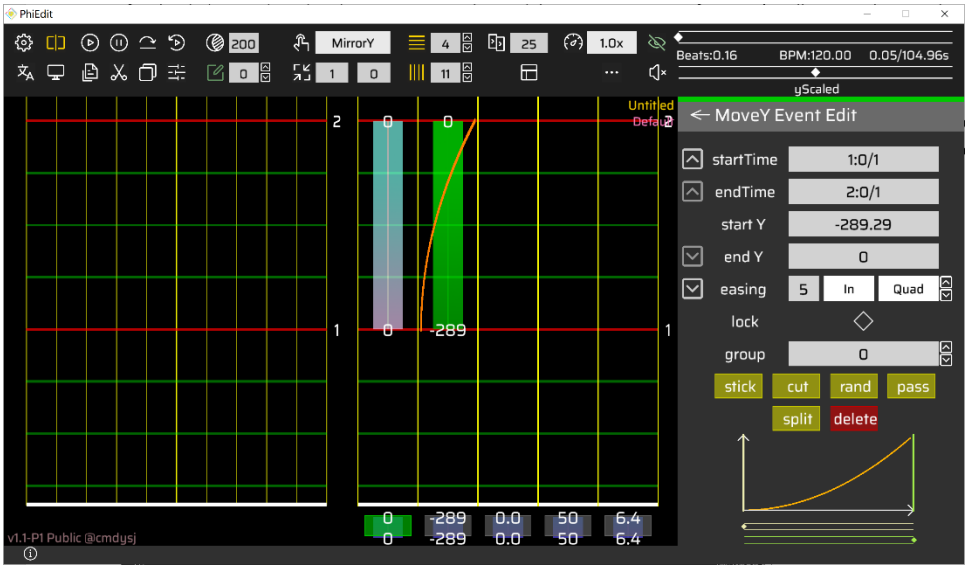
The slight difference is that same-type events on the same layer are not allowed to overlap in principle, if the events overlap when you move the mouse, the figure will turn red and cannot be placed.



The event editing window has five columns, from left to right, corresponding to the five ordinary events MoveX, MoveY, Rotate, Alpha, and Speed. MoveXY control line's anchor point's coordinates, Rotate control line's angle (angle system), Alpha control line's transparency ranging [0,255], Speed control line's base speed (can be non-positive).

If XY Bind is on, then the placement, time editing, deletion, cutting, etc. of MoveX/Y will act simultaneously on a MoveY/X that is equal in time to it (same in start time and end time), this is to facilitate the maintenance of XY Bind of this chart.

After placing an event, the head and easing of it will automatically inherit the tail and easing of the previous event of that type, and its tail will be the same as the head. The software will automatically select the newly placed event for you and enter the event edit



The meaning of these text boxes is the same as we mentioned before, the drop-down list to the right of the easing can be clicked to show options, the curve corresponding to that easing type will be displayed in real time below, generally speaking, the curve with a larger number will be steeper.

Click “delete”, press Delete key, or hold D and the right mouse button to delete the event.

Speed event easing type can only be 1 (linear), not editable

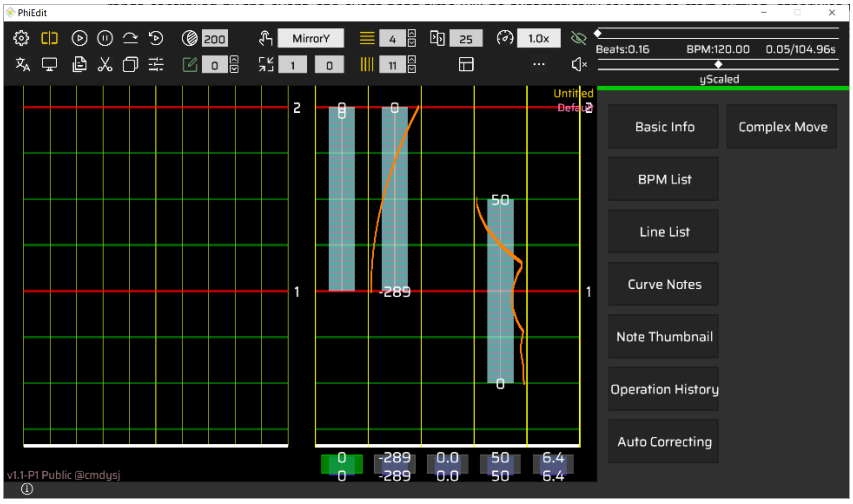
For quick editing, pressing the A key, S key, as well as the CTRL key and mouse wheel after selecting an event may have a shortcut effect
For MoveX/Y, Rotate, Speed events, pressing the A key will change the head and tail values to the opposite of the original number
For Alpha events, pressing the A key will change the tail to 0, pressing the S key will change the tail to 255
For all events, holding down the CTRL key and using the mouse wheel will make the tail data of the event fine-tuned (with the default parameters, for example, one wheel will make the MoveX/Y, Alpha tail ±10, make the Rotate tail ±0.25, and make the Speed tail ±0.1)

Lock property: if the lock property is true, then the head and tail will always keep equal, meaning only the moment when the time goes to its head the event plays an actual role, i.e. a transient event

The color of the locked event (dark blue) is different from the non-locked event, and the lock property can be changed by changing the checkbox to the right of "lock".

Stick: click to fill the tail of the previous event of this kind into selected event’s head

Cut: After selecting an event and clicking "cut", if the nearest horizontal line at global time is not within the time range controlled by the event, the event head time will be automatically selected to start cutting, otherwise the event will be cut before and after time with the nearest horizontal line at global time as the center, and the cutting spacing will be the horizontal line distance/cutting density (can be adjusted in settings, see chapter 6). If XY bind is turned on, cutting MoveX/Y events causes cutting of MoveY/X events at the same time



The time of an event can be dragged. Hold down the Z key, click on an event and drag it with the left mouse button to change its start time, and drag it with the right mouse button to change its end time

*Event layers (advanced function)
For most of the event editing, we will only use the 0th layer of the line (each line has five layers from 0 to 4), and each property of the line is equal to the sum of the current values of that property in all layers (compound motion), for example, if the 0th layer has a circular motion around a fixed point and the 1st layer has a MoveX to the right, the effect will be similar to the movement of a point of the wheel border when riding a bicycle

The buttons for the layers are below the event editing window and can be toggled by clicking on it. A gray button means that there is no event in it, a green button means that the layer is being edited, a red button means that there are events but it is not visible in the editing window, and a yellow button means that there are events visible in the editing window.
Note that layer 4 is used to place Special events (see Chapter 13) and can't be used to place the five ordinary events

Content in newer Versions (You should read through the entire instructions before reading this section) :

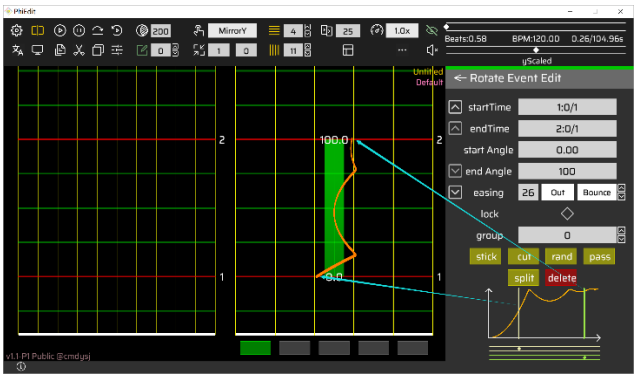
Replacing the r key with the q key allows you to place locked events directly. Replacing the r key with pressing number e at the end of event placement allows you to directly place an event with a easing type of e

Visual curves will be drawn on the event, which can be turned off in the settings
The head and tail of each full event segment will be marked with two numbers indicating the minimum and maximum value of the segment. Can be turned off in the settings

Events in a group will be gold in color, and the content of events in the same group will always keep the same

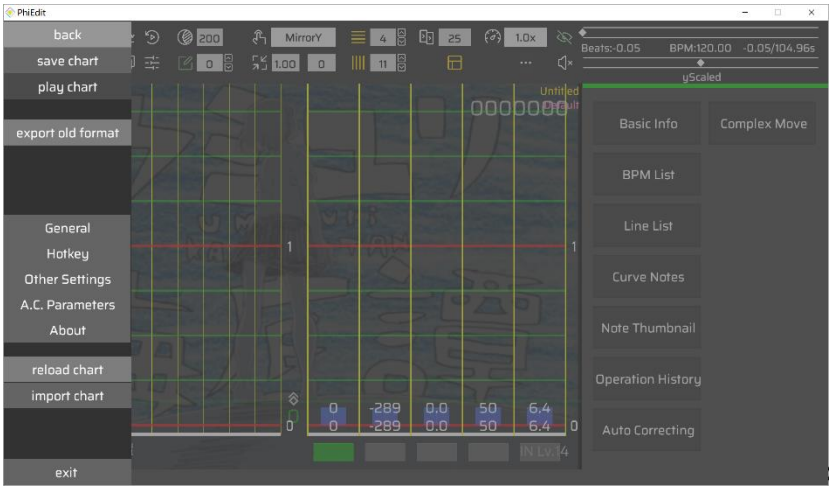
Rand: fill in random values at the tail
Pass: using the last two events of this type to extrapolate the head and tail of this event, for example, if the last two events are 0 → 50, 50 → 100, the recursion will be 100 → 150
Split: you can cut the selected event into two at the global time, the two events are filled according to time distribution, the easing type is the same as the original event
For example, (1~4 beats, 0→150, easing 4). Split from 2 beats, get (1~2 beats, 0→50, easing 4) & (2~4 beats, 50→150, easing 4)
Time can be filled with a decimal, for example, if the number of horizontal lines is 4, filling in 12.1 means 12:1/4, 12.2 means 12:2/4 = 12:1/2

You can set the left and right endpoints of easing, and the event will use the curve segments framed by the left and right endpoints as the actual easing curve.



6.Settings

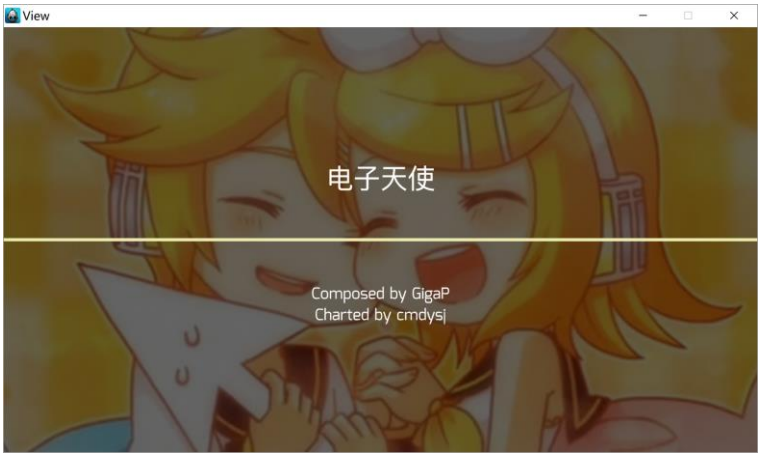
Click on the gear at the top left corner of the window to open Settings



Click “save chart” or press CTRL+S keys to save the chart. “export old format” will generate a packaged zip file with the chart file (.pec) in Phiediter format, together with music and illustration file.

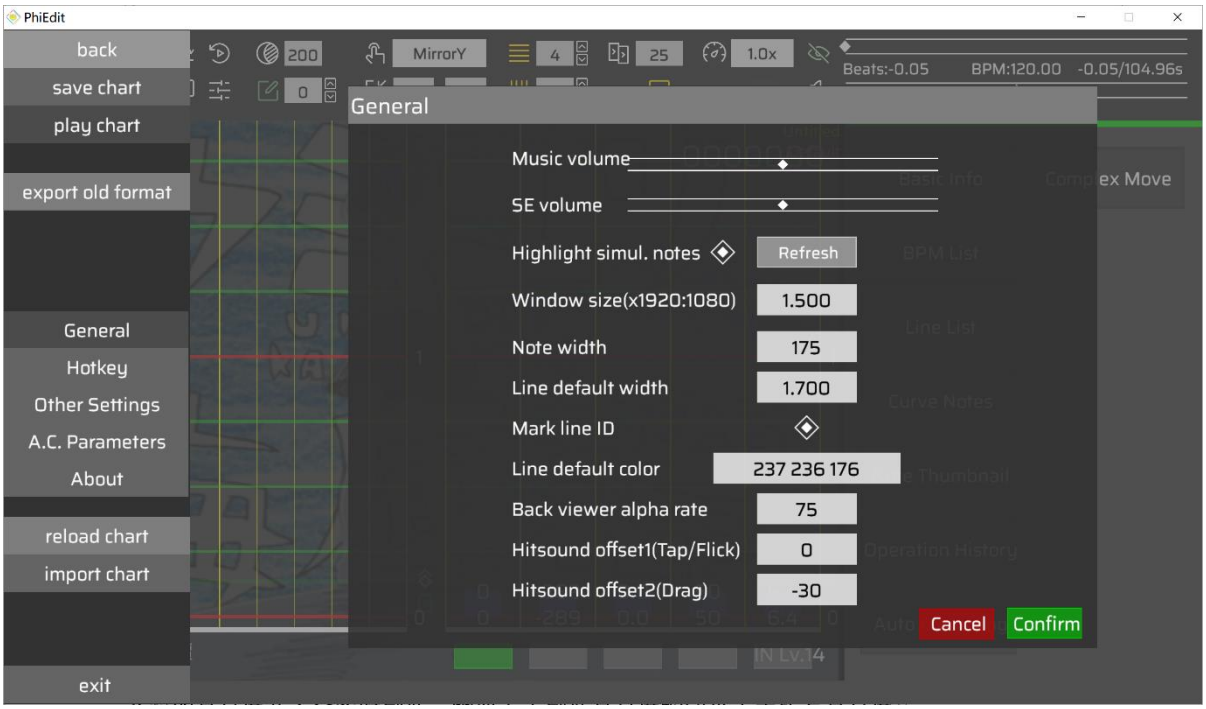
If the XY is not Binded (the second horizontal line on the right becomes red), it cannot be exported in old format, you can try to complete it according to Auto correcting: separated MoveX/Y Event, or use PEConverter to convert the exported json format chart (inside .pez).

Clicking on “play chart” will open a separate preview window named View, press the space bar to start playing, pause or continue



Next, have a look of the specific categories of the settings

Click on “General”



Some clarifications:

The note highlights are not refreshed in real time, you need to click the “Refresh” button to reset all the highlights
The note width is in pixels, the default width of the judgment line refers to the magnification along the Y-axis

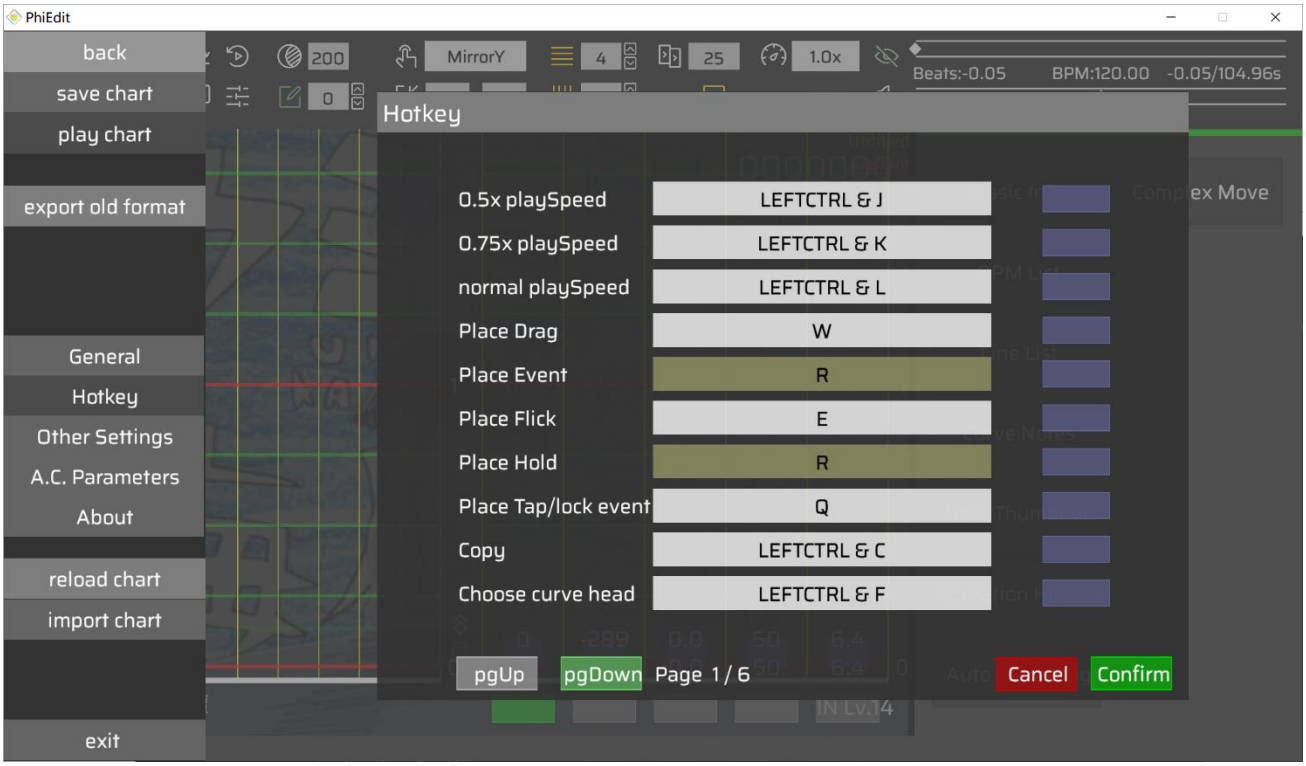
The playback window will no longer be labeled with the number of judgment lines after closing “Mark line ID”.
The default color of the judgment line is RGB format, if there is any color event on one line, the default color of that line will be ignored

“Back viewer alpha rate” refers to brightness of the background of playback and preview window, ranging [0,255].

“Hitsound offset” adjusts the time offset between the note being judged and the sound effect being emitted, setting s for Tap/Flick and Drag are separated

Click Cancel to abandon unsaved edits, click Confirm to save the edits

Click “Hotkey”



The left side text in English refers to the function of the hotkey, to the right is the content of this hotkey and a lavender button
Button below can be used to turn pages

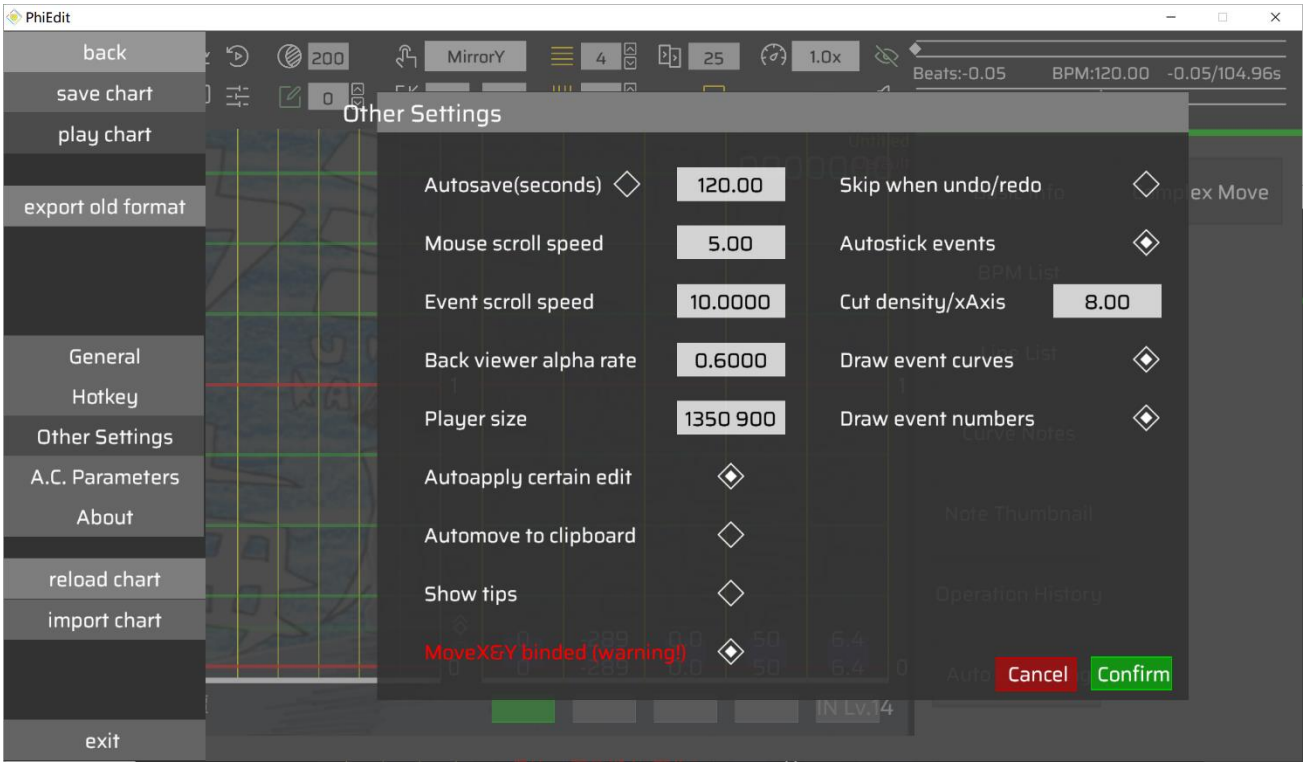
The editing of hotkeys is divided into manual input and auxiliary input:

Manual input: split by & symbol, support all letters, numbers and some symbols, require all English capitalization
Auxiliary input: click the lavender button on the right side, the button will turn green, then the input on the keyboard will be filled into the hotkey text box directly, pressing the Backspace key will delete the last key in the text box.
As with Windows hotkeys, there is no need to satisfy the order of execution, as long as all the keys are pressed at the same time. Specially, for shortcut keys of the type Hold Play Release Stop, any key that is not pressed will cause the stop action to be triggered

If the hotkeys contain each other, the text box will be marked in red in some cases and in yellow in other cases. For example, the inclusion of the Pre key with all other keys will only result in yellow, the inclusion between Place Event and Place Hold will only result in yellow, but if you change Place Flick to R in the above diagram, the text boxes for Place Event, Hold, and Flick will all turn red

The hotkeys are stored in Hotkey.txt and can be copied for backup purposes

Click “Other Settings”



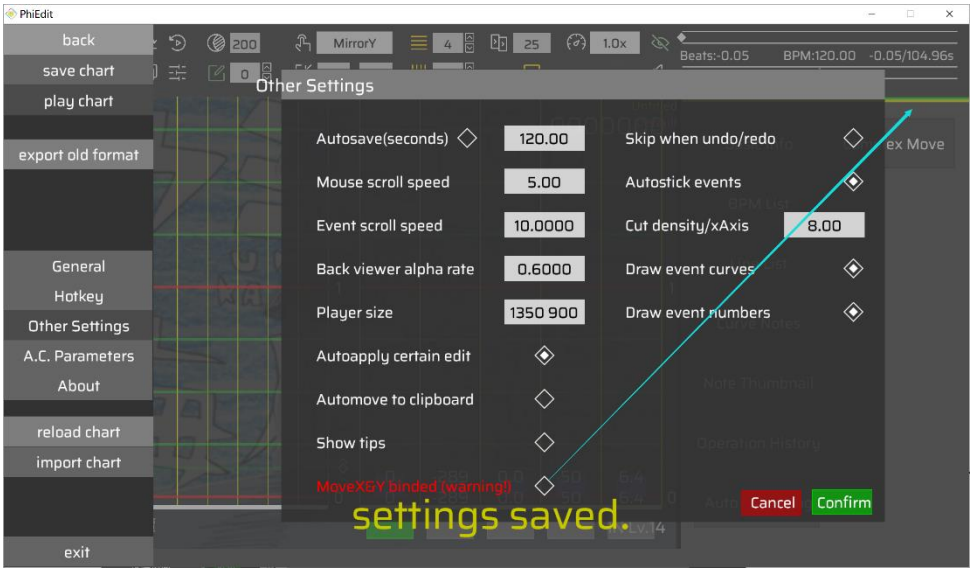
If Autosave is turned on, the autosave file will appear in that chart folder with its save time marked

AutoSave_2021_10_16_19_11_6_56...	2021/10/16 19:11	PEC 文件	141 KB
AutoSave_2021_10_16_19_48_16_5...	2021/10/16 19:48	PEC 文件	141 KB
AutoSave_2021_10_17_9_22_1_567...	2021/10/17 9:22	PEC 文件	140 KB
AutoSave_2021_10_17_9_23_1_567...	2021/10/17 9:23	PEC 文件	140 KB
AutoSave_2021_10_17_9_24_1_567...	2021/10/17 9:24	PEC 文件	140 KB
AutoSave_2021_10_17_9_25_1_567...	2021/10/17 9:25	PEC 文件	140 KB
AutoSave_2021_10_17_9_26_1_567...	2021/10/17 9:26	PEC 文件	140 KB

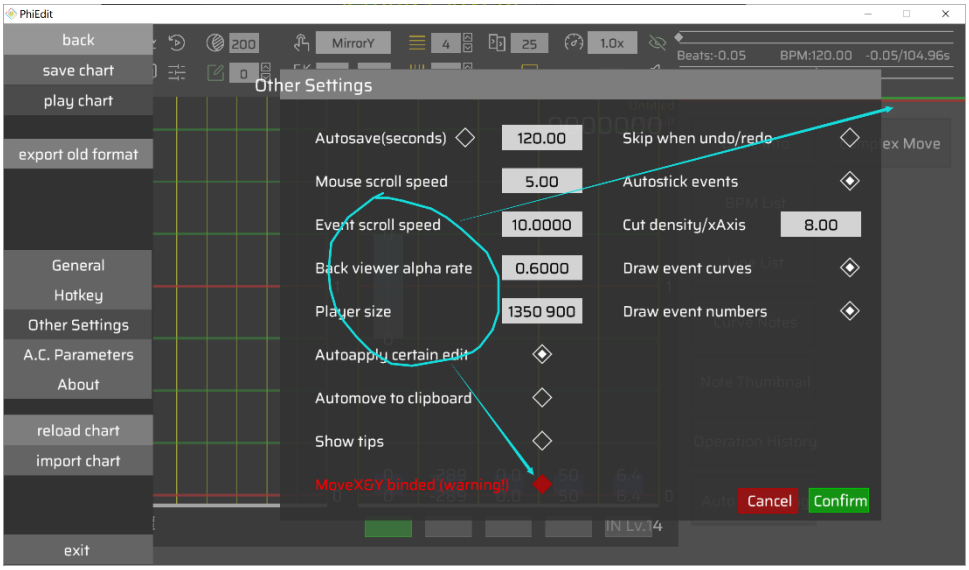
“Mouse scroll speed” is used to adjust the global time adjustment rate when using the mouse wheel, “Event Scroll Speed” is used to adjust the event adjustment rate when holding down CTRL and using the mouse wheel.
“Back viewer alpha rate” refers to the transparency of the playback window when the real time display is turned on, 0 means completely transparent, 1 means completely opaque
“Player size” refers to the resolution size of preview window, needn’t be proportional to 1920*1080

“Autoapply certain edit” makes it possible to save single edits to notes and events in real time without hitting Save button or Enter key, and single edits to notes and events cannot be undone or restored when this is on
“Automove to Clipboard” When enabled, multi-selected notes or events will be automatically moved to the clipboard (automatically CTRL+C)

“MoveX&Y Binded” This option is on by default and has the effect described in the previous section about XY Bind. If it is turned off, MoveX and MoveY events will not be time-associated, and you will be able to place separated XY events, at this time the second green bar on the upper right side of the editing area will turn yellow



In this case, placing time-different MoveX,MoveY events will break the isochronous property of the chart, i.e. the time of MoveX and Y will correspond one by one. The second bar on the upper right side will change from yellow to red, and the XY bind option in the settings couldn't be enabled.



If you delete or complete the XY events that are not simultaneous, the line on the right side will turn yellow again, which means that the chart is restored to the isochronous property, then you can enable the XY bind and the line will turn green again

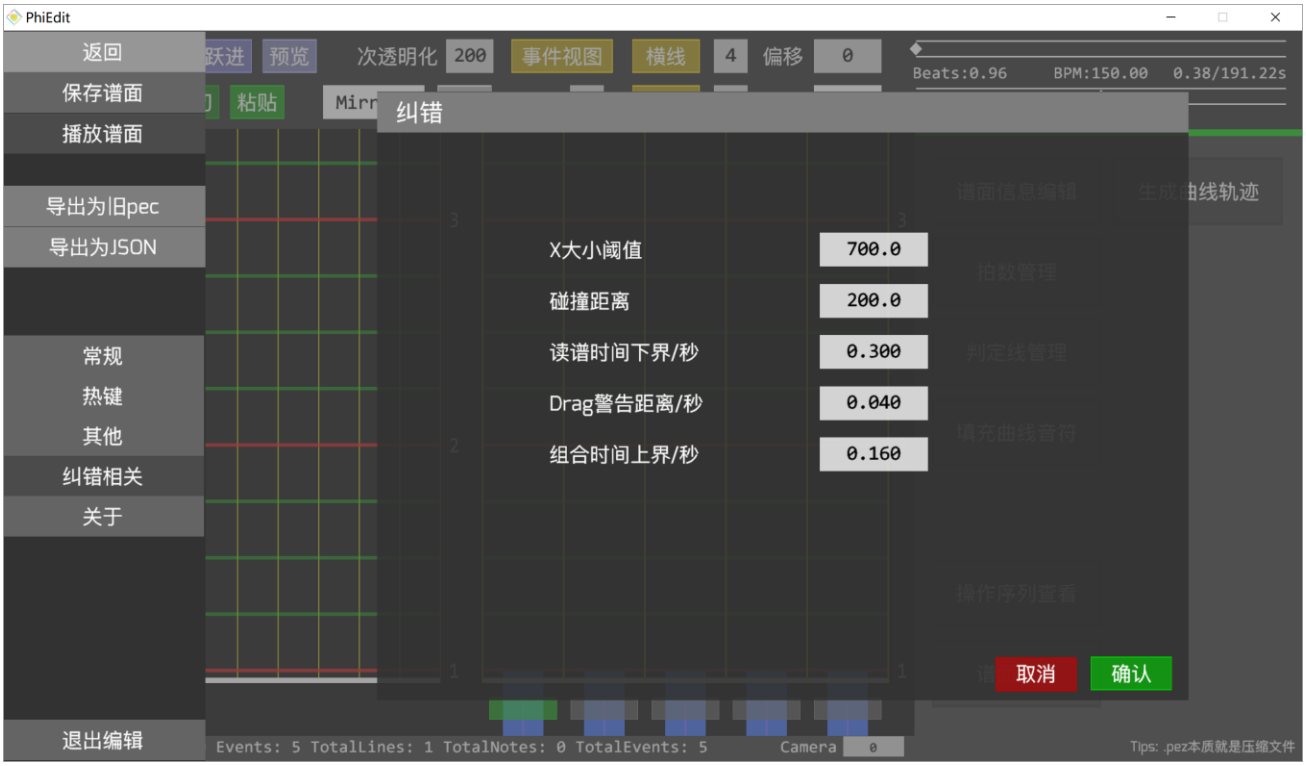
"Skip when undo/redo" When enabled, global time and vision will automatically jump to the location where the change occurred when undoing or redoing

"Autostick events" When enabled, editing an event will cause the next event of that type to perform a bond, filling this event's tail to next event's head, but if the next event is a locked event, no bonding will be performed

"Cut density/xAxis" event cutting density, the greater the density, the better the effect will be after cutting

Chart with corrupted isochronous properties cannot be exported as the old format

Click “A.C. Parameters”



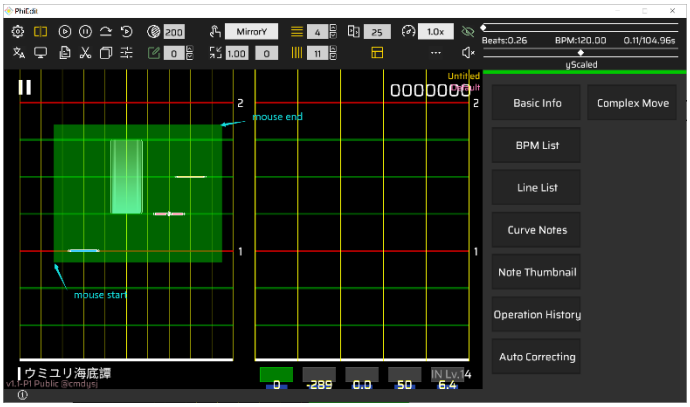
Here you can adjust some of the parameters used for Auto correcting (see Chapter 9)

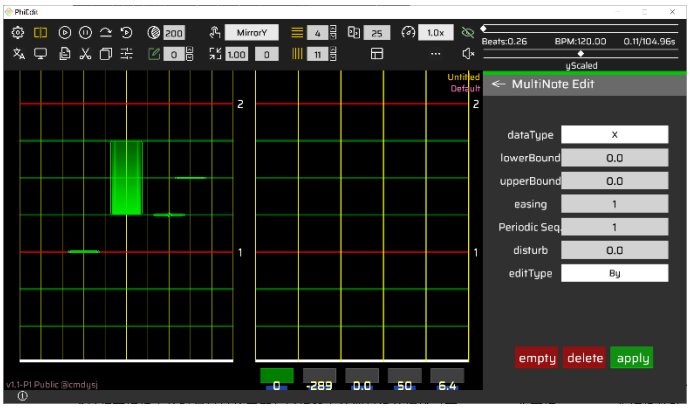
7.Batch process part 1

Hold down CTRL, click on the note, that will add or taken that note to or out from multi-selection

Hold down SHIFT, click the left mouse button, move the mouse position (you can release SHIFT at this time), a green multi-select box will appear following the mouse position; hold down SHIFT again and click the left mouse button to end the box, all the notes that are boxed will be added to the multi-select

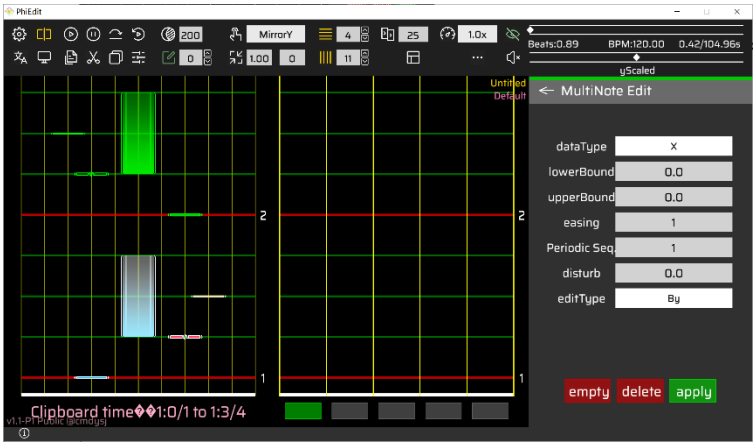
Click Esc to take out all the multi-selected notes





After multi-selecting, press CTRL+C to move multi-selected notes into clipboard, move the mouse, press CTRL+V to paste the notes in the clipboard, the alignment strategy is to align the earliest notes in clipboard with the nearest horizontal line of the mouse location.

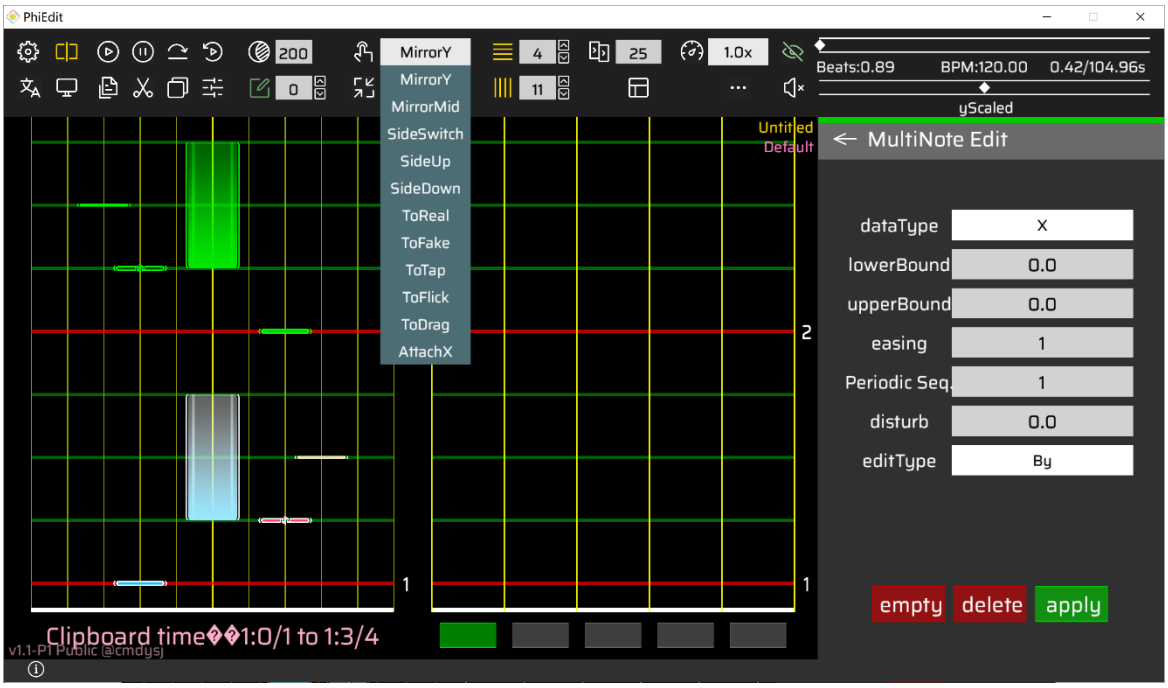
CTRL+X is for cutting, CTRL+B is for mirrored pasting, i.e. all notes in the clipboard will be pasted with their X coordinates reversed. You can paste across lines (or across layers)



Press “delete”, Delete key, or D key and right mouse button to delete all multi-selected notes.

These multi-select editing for notes is exactly the same for events (except that there is no CTRL+B for events), so I will not repeat it, the following to introduce is the list of executions that are used for quick multi-editing of notes

Click on the drop-down list with “MirrorY “written on it, the following options will appear



Clicking on the "Execute" (hand type) button will result in the following changes:

MirrorY Each multi-selected note reverses its Y-axis (the "multi-selected" is omitted below)

MirrorMid Notes flipped according to the selected center (the X coordinate of the middle note after sequencing)

SideSwitch Notes reverses its falling side

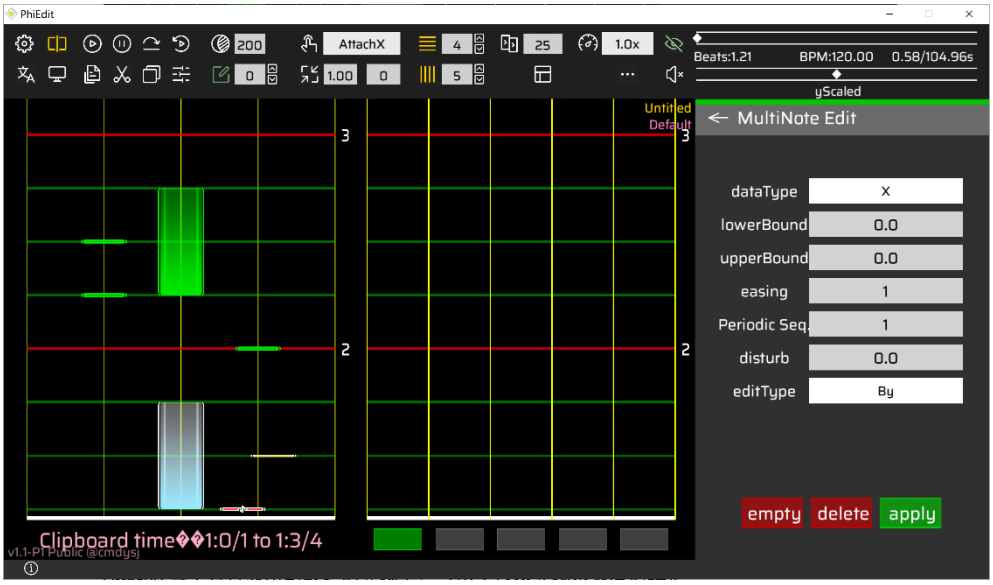
SideUp/Down Notes falling side assign to Up/Down

ToReal/Fake Notes become real/fake

ToTap/Flick/Drag Notes switch type, not valid for hold

AttachX Notes attached to the nearest vertical line, used for maintenance after modifying number of vertical lines

As show below, after executing a “ToTap” and changing the number of vertical lines to 5, an “AttachX” is executed:



Additional content:

Time range is displayed when there is content in the clipboard

After muti-selecting notes or events , you can use the arrow keys to control them, moving left and right by half a vertical line interval each time, and moving up and down by one horizontal line interval

Press ALT+F to jump to the starting position of the multi-selected content, press ALT+G to jump to the end position of the multi-selected content

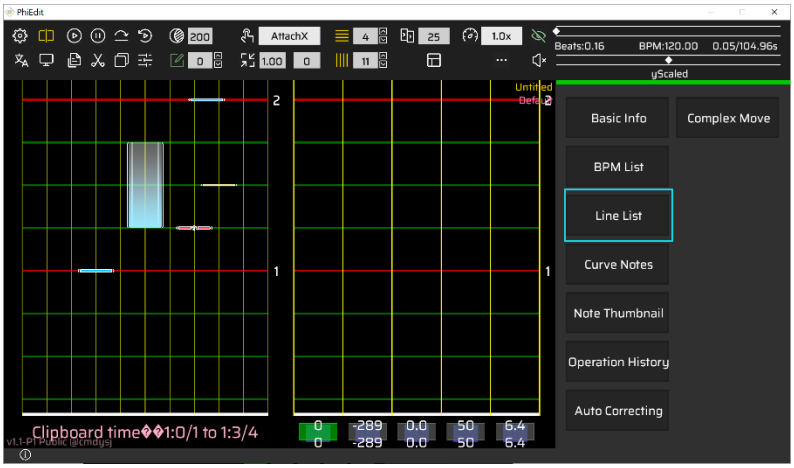
Numeric Paste: Default shortcut key ALT+V

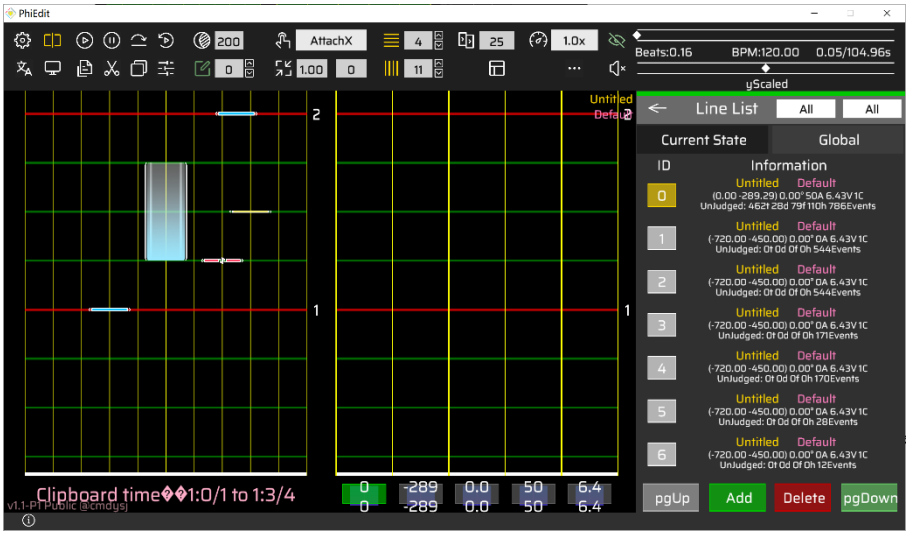
When using this function to paste events, you won’t create new events, but add up to the events that could match in time. Combine this function with cutting, you can merge events at different layers into one layer

Center vertical line color highlighting

8.Line List and Curve Notes

Click “Line List”





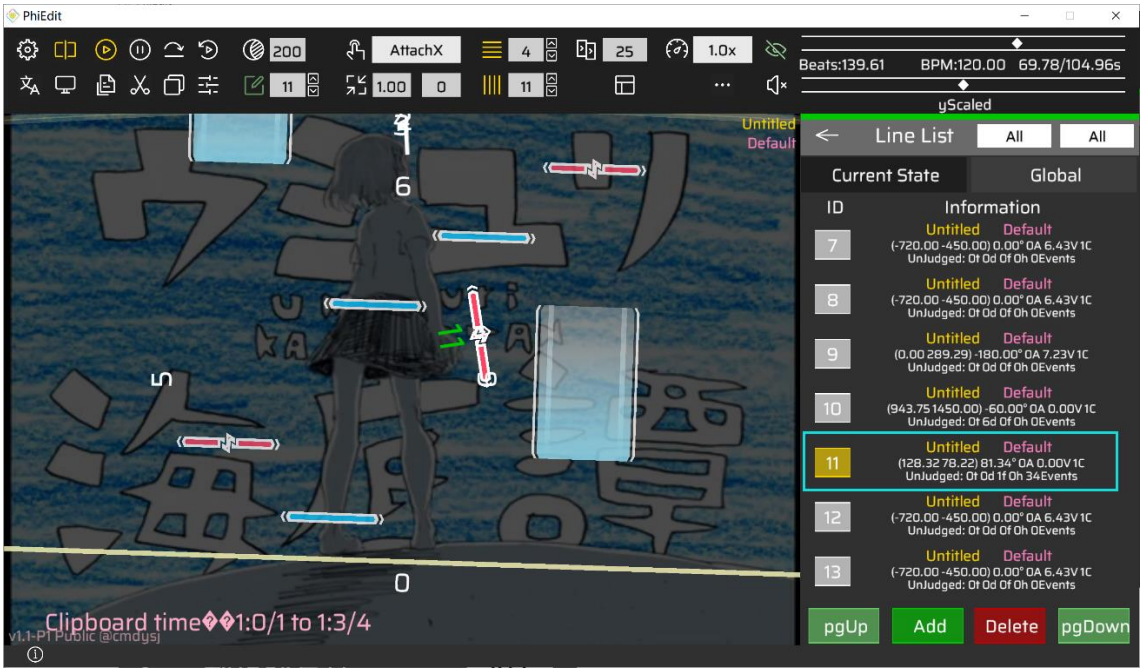
First look at the “current status” bar, it will list certain information of all the judgment lines

Click Add to add an empty judgment line (in fact, each event will set aside a pad, and you should not delete the pad event)
Click Delete will ask for a second confirmation whether to delete the line being edited, the deletion **can not be undone**

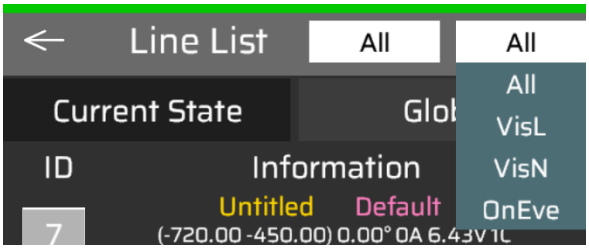
As the picture below, the listed line information consists of three rows of data:

The first row is the name and group of the selected line
The second row (x,y) a1° a2A a3V a4C indicates that the line is currently anchored at (x,y), with an angle of a1°, alpha of a2, base speed of a3, and **cover** of a4

The numbers before “t d f h Events” in the third row indicate the number of tap, drag, flick, hold and events on the line that have not been judged (or finished)



Click the drop-down list above “Global” and some filters appear (another drop-down box is used to list only the lines within certain group)



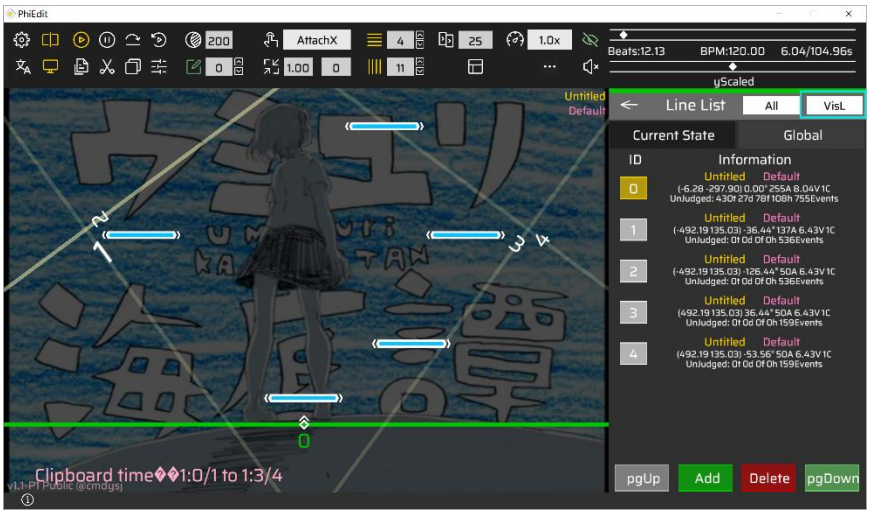
Meaning：

All　List all lines

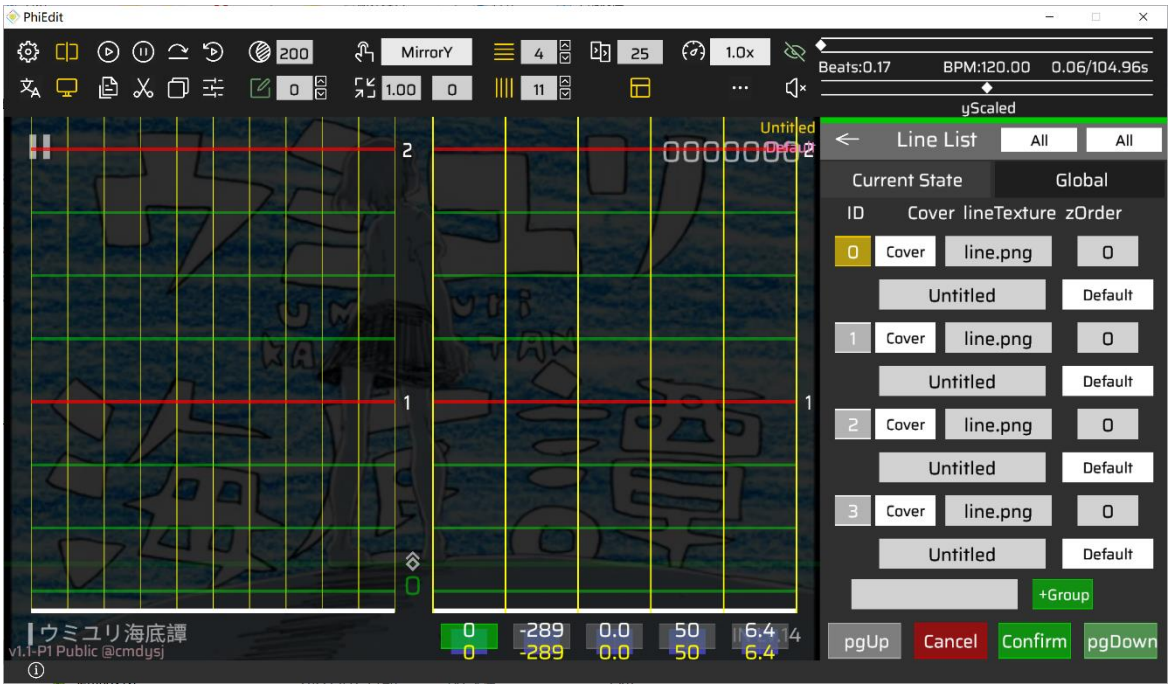
VisL　List only lines with alpha>0

VisN　List only lines with visible notes in screen

OnEve　List only lines with events being conducted currently

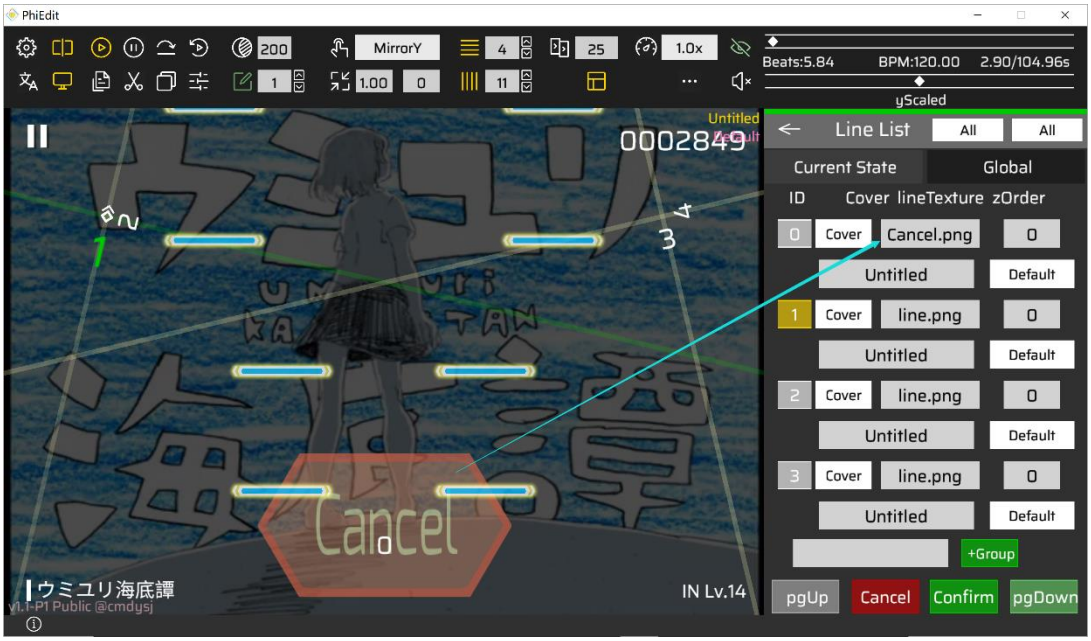


Next, click “Global”



The “Cover” property refers to whether note across the line is visible, Cover means not displayed, UnCover means displayed. For example, if a Tap is on a line that pulls a one-beat-long Speed event with a negative tail before the Tap hit the line, then if the line is Cover, the Tap will touch the line and hide at some point within 1 beat before it’s judged, and will remain invisible until it is hit; if the line is UnCover, then the Tap will remains visible when it comes under the line and returns to the line to be judged

“lineTexture” is the texture file of the judgment line, line.png by default, if you change it, you need to put the image to be used in the /Resources folder. If the line does not have a y-axis scaling event, the default line width in settings will be used as its y-axis scaling; if it has no color event, the default line color will be used as its color, as follows, the Cancel image is subject to a certain y-axis scaling and golden rendering

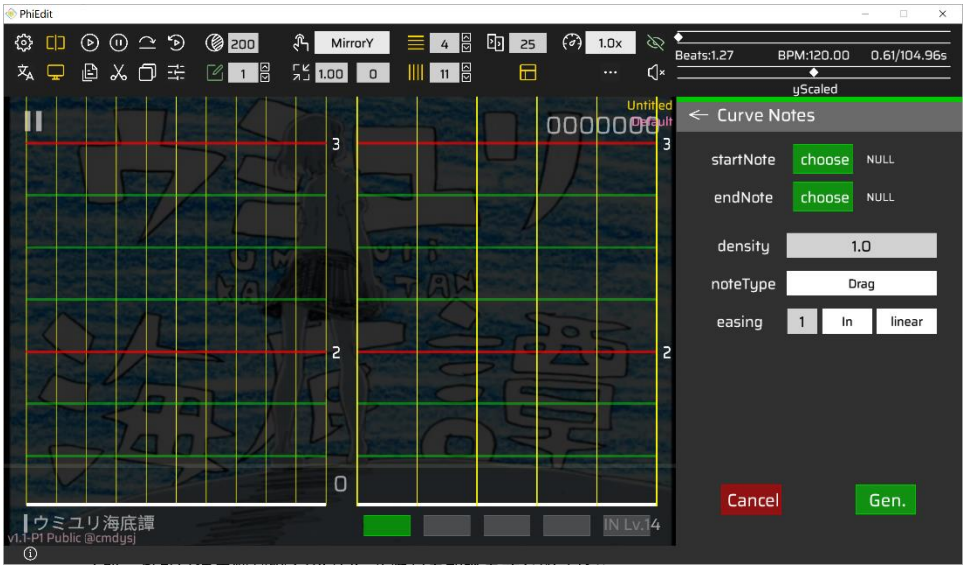


zOrder determines the rendering order of the lines, the larger ones will be on top of the smaller ones

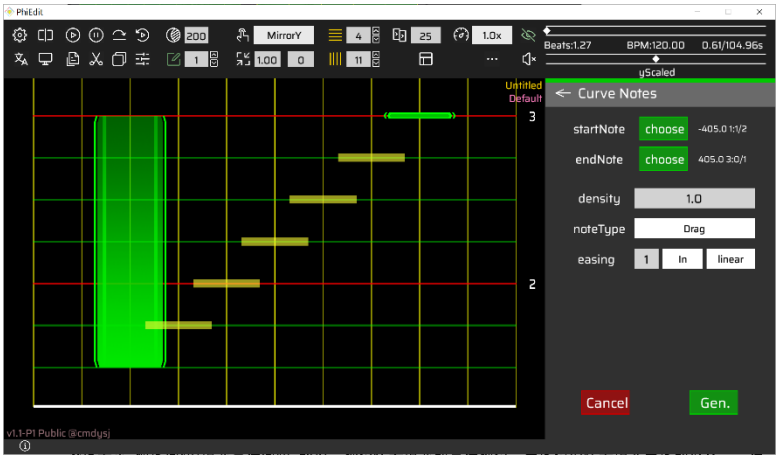
Click Cancel to abandon unsaved edits, click Confirm to save edits

Next, let's look at the curve notes

Go back to the main menu and click on “Curve Notes”

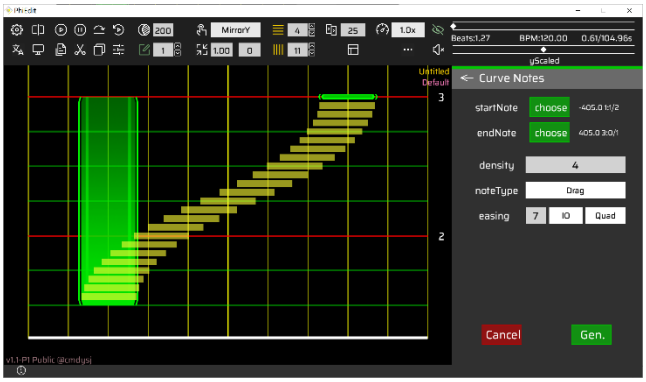


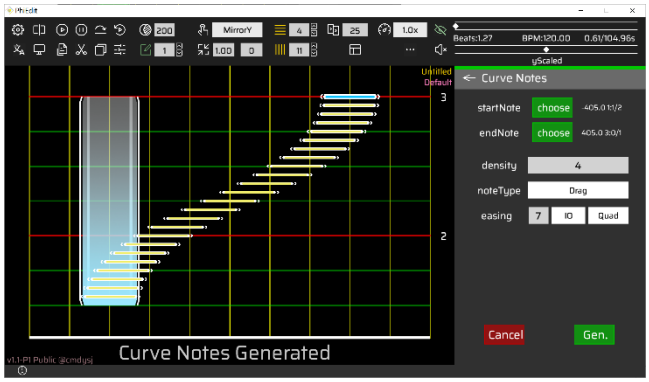
Click the green selection button and select the notes in the edit window for curve’s start and end. You can also use CTRL+F/G to start the selection



Density means the filling density, noteType means filling type, easing means the shape of the fill curve, which will be displayed in real time.

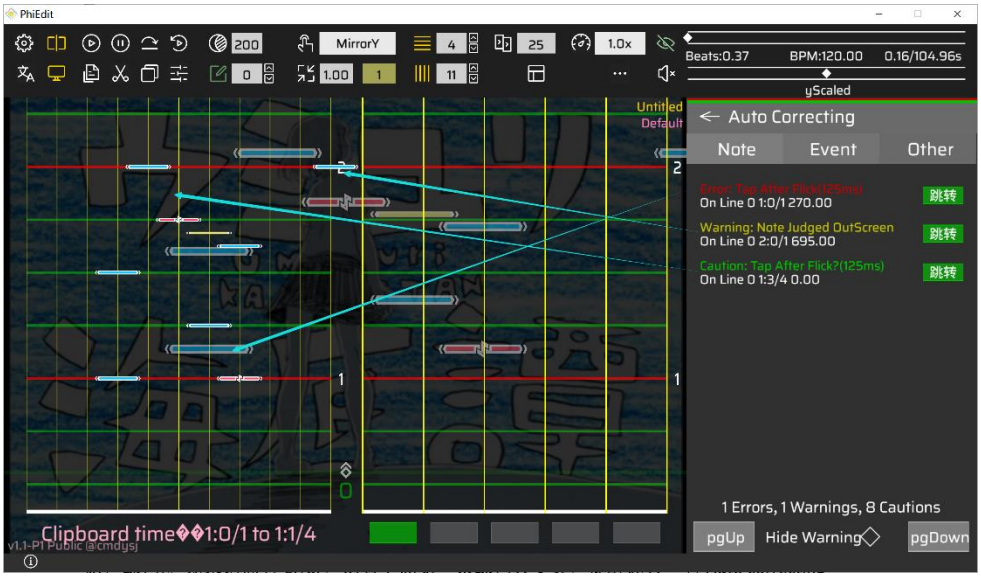
Click “Gen.” to generate





9.Auto correcting

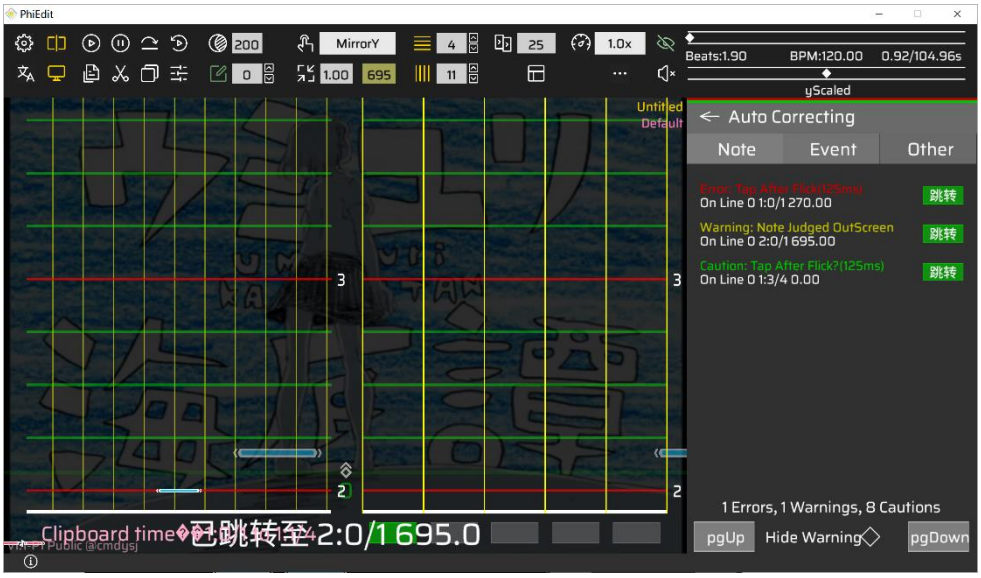
Click “Auto Correcting” from main menu



The error correction information is divided into notes, events, and others by belonging, and into Error (red), Warning (yellow), and Caution (green) by severity level. If the chart has Error(s), the first green bar on the upper right side will turn red, reminding you to check Auto correcting

Click the “Hide Warning” checkbox to display only the Error information. The number of Error, Warning, and Caution is shown above it

In this picture, trying to tap-and-slide the flick on 1:0/1 will cause the tap on 1:1/4 judged as “good”
Clicking on the jump button (跳转) will align global time and vision with the location where the problem occurred



In general, Error basically needs to be corrected, Warning should be carefully lined up, take Caution as reference

List of error correction types：

Note：

Caution: X Too Large
Error: Time Out of Range
Warning: Note Judged OutScreen
Caution: Short Readtime([?]ms)
Error: Tap&Hold / Tap&Tap / Hold&Hold Overlapped
Caution: Hold Sticked?
Error: Tap After Flick([?]ms)
Caution: Tap After Flick?([?]ms)
Warning: Tap After Drag([?]ms)
Caution: Tap After Drag?([?]ms)

Event：

Error: Event Time Out of Range
Error: illegal [?] Event
Error: [?] Event OverLapped
Warning: Alpha Event Over Range
Caution: Too Many Linear MoveX/MoveY/Rotate
Caution: separated MoveX/MoveY Event

Other：

Caution: Customized Note Size
Caution: Using Fake Note
Caution: Customized Visible Time

10.Undo and redo

In the editor, you can use CTRL+Z to undo and CTRL+Y to redo at any time
Go back to the main menu and click on "Operation History"

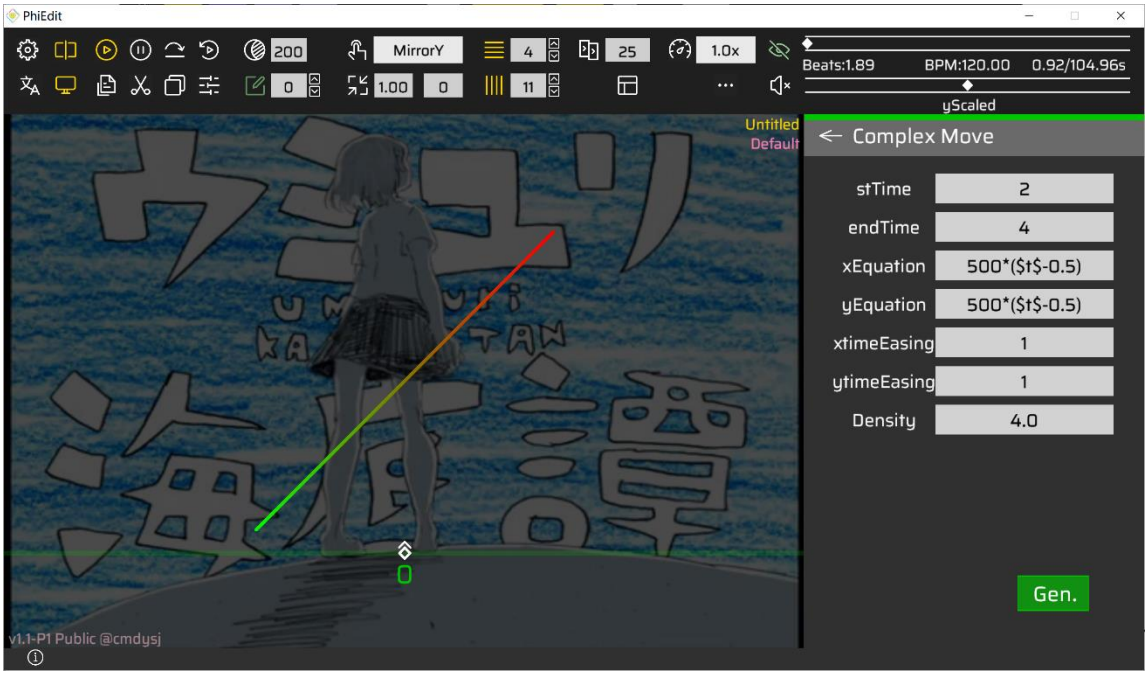
In this screen displays the history of operations and history of undone operations (both up to 20 steps, any new recorded operations will cause the history of undone operations to be cleared), Undo and redo buttons function the same as CTRL+Z/Y

Operations that cannot be undone:

Note CTRL key & scroll wheel to change the width
Judgment line deletion
Change of settings

11.Complex Move

In the main menu, click "Complex Move", the following interface appears (I filled in advance)



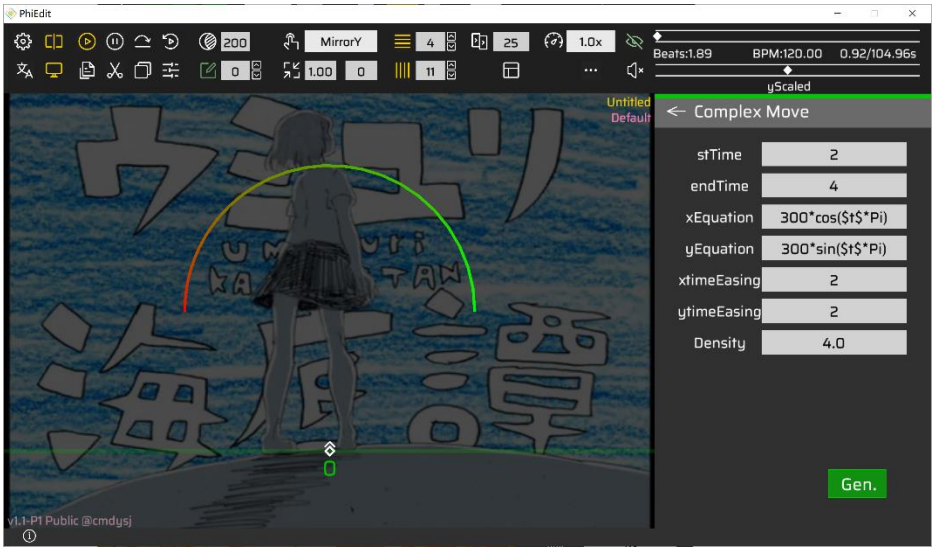
Specific operation:
Fill in the start and end times in beats a:b/c (or a.x)
Fill in the parametric equations for the X and Y coordinates, where t represents the time parameter t (ranging from [0,1]). The parametric equations support quadratic operations, power operations, trigonometric functions, minmax functions, etc. For convenience, Pi represents circumference

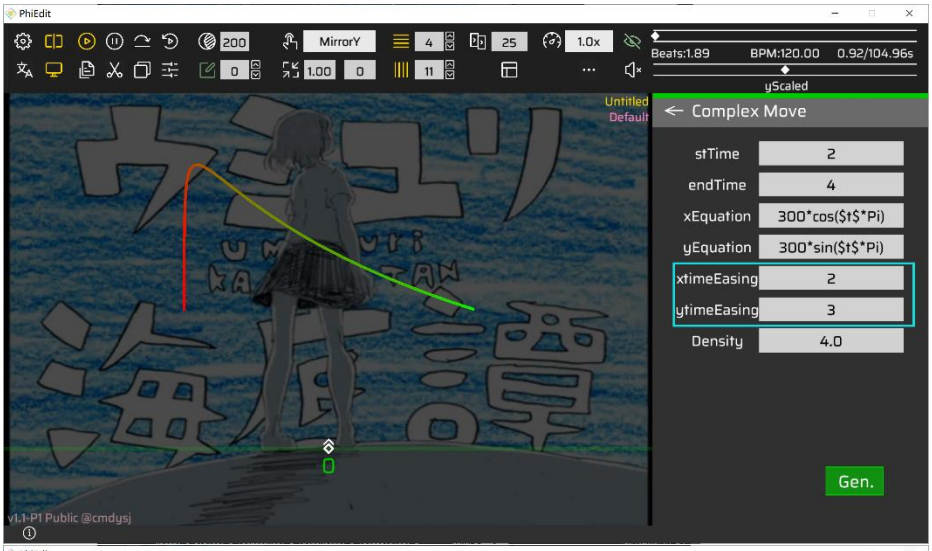
Then, it is also necessary to fill in the type of time easing of X and Y and generate density
The density determines the accuracy of the fit, if the curve looks too rough, the density should be turned up
The curve will generate a preview in the window in real time, the smaller the t the greener the color, the larger the t the more red the color.
Click Gen. for the actual generation, the operation can be undone or redone

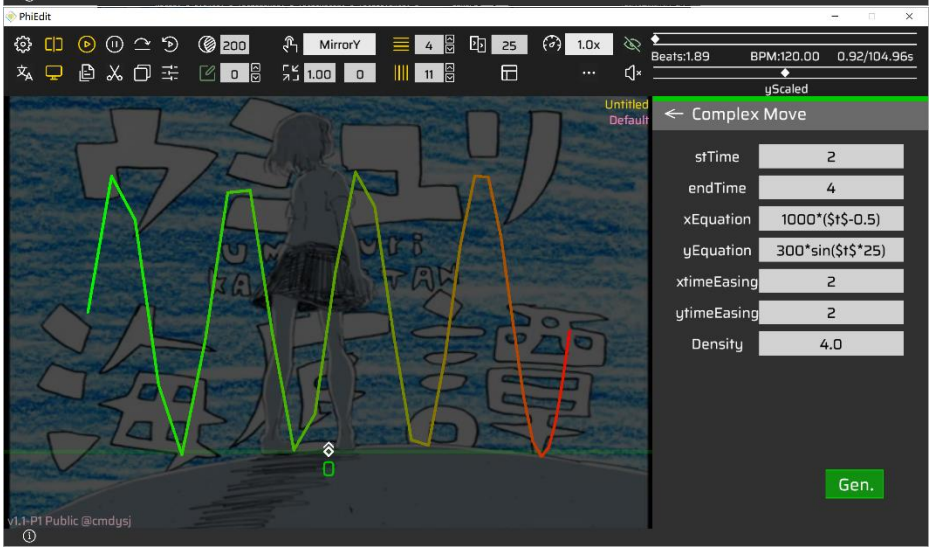
Here is an explanation of XY time easing, if both are 1 then the movement will be uniform, if they are equal non-1 numbers then the shape of the curve will not change, but the movement will not be uniform (for example, if both time easing are 3, which is InSine, then the line will do accelerated movement along the track); if the two numbers are different, then the shape of the curve will change

In the v1.1 update, time easing can be entered as three numbers, the last two numbers indicate the position of the left and right endpoints of the easing, ranging from 0 to 1.0

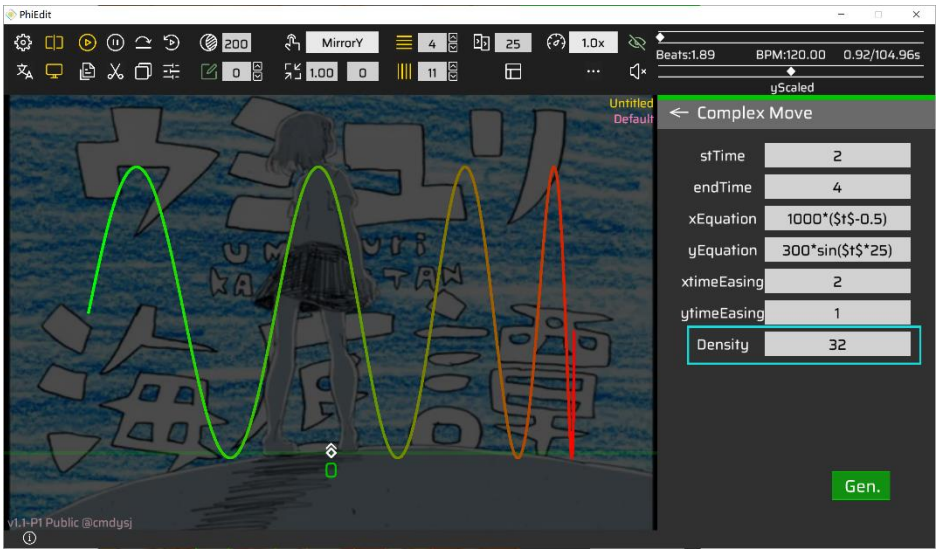
Some examples of complex moves are shown below:

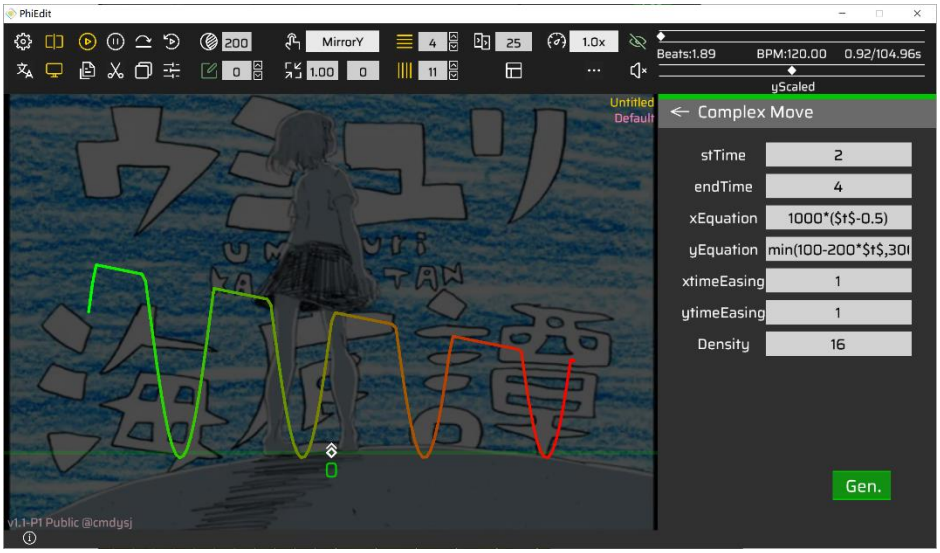






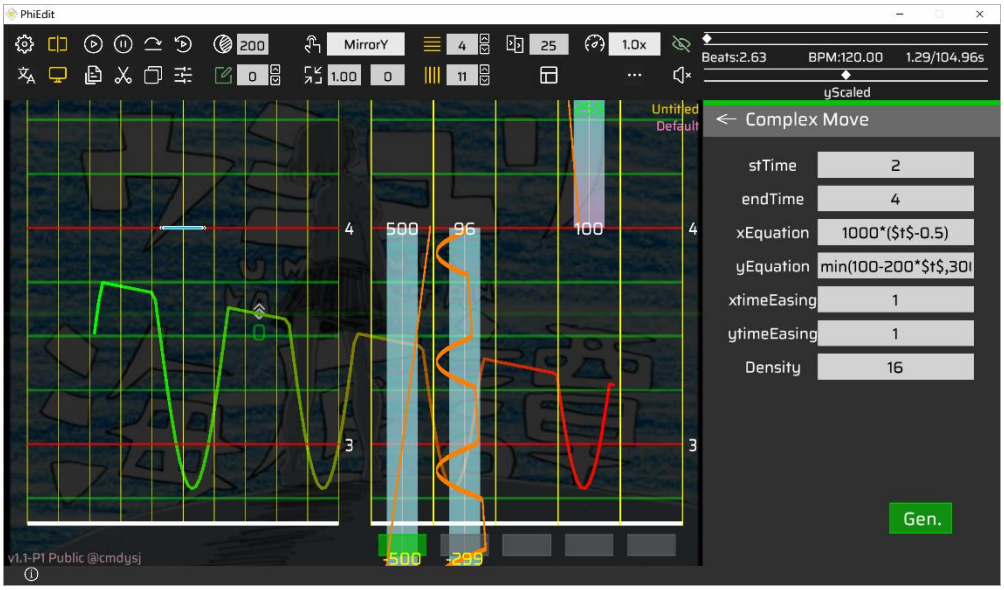
The density of the above picture is too small!





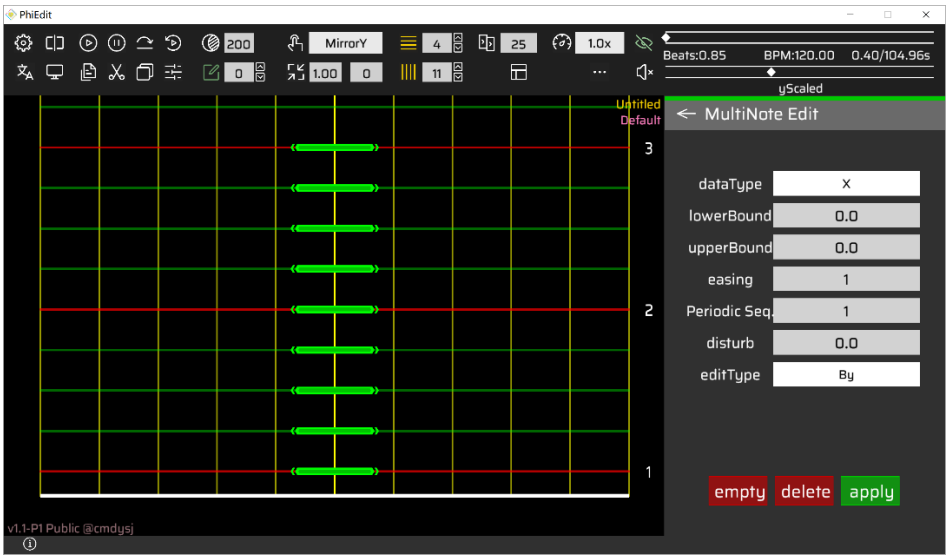
xEquation: 1000*(t-0.5)

yEquation: min(100-200*t,300*sin(t*25))



12.Batch process part 2

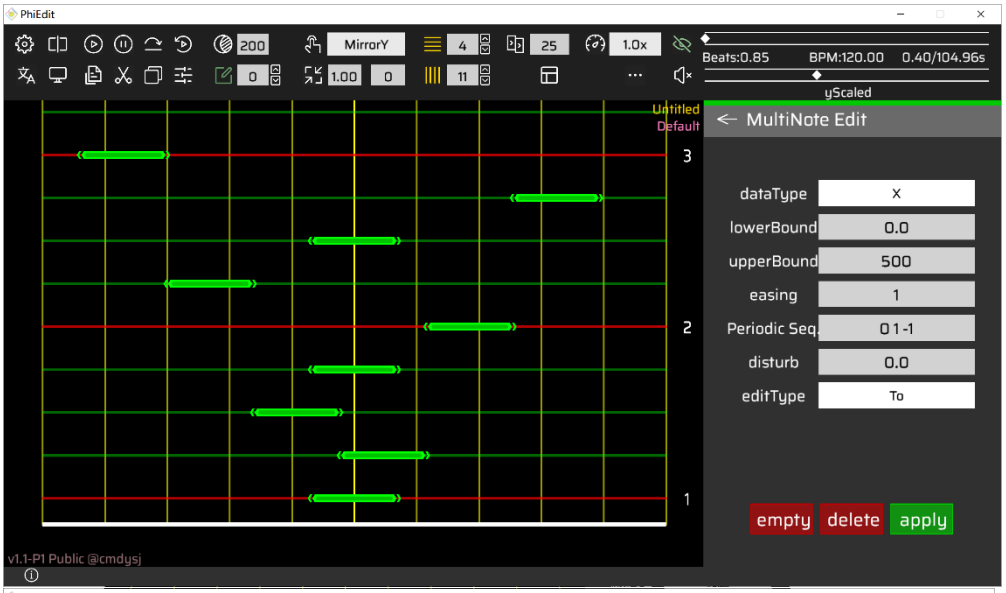
Let's place some Taps with coordinates 0 in the note editing area, multi-select these Taps, and the message window will show "MultiNote Edit"

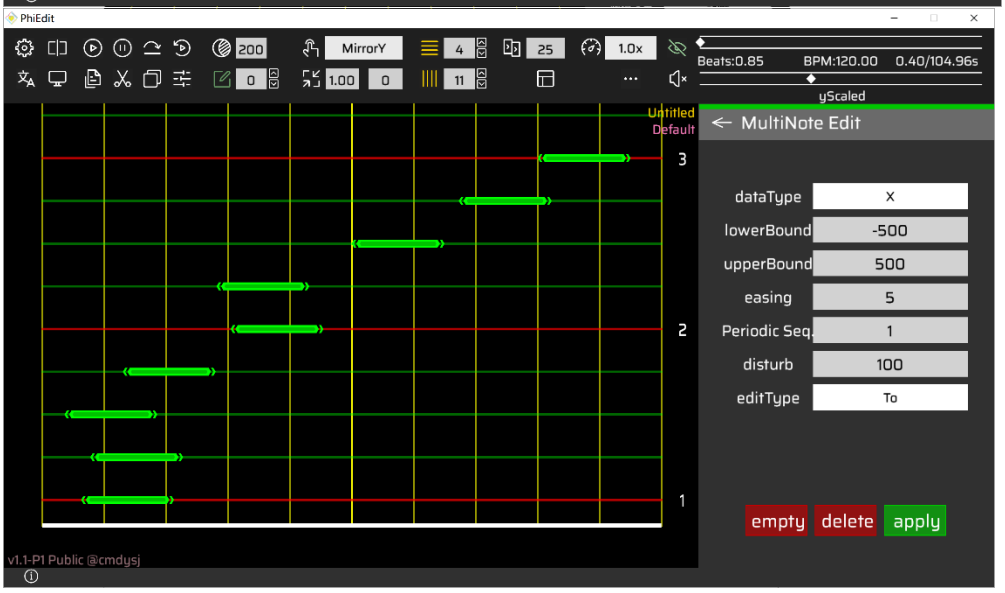


Select the data type you want to modify (can be X/Speed/Size/YOffset/VisibleTime)
Fill in the value's lower bound, upper bound, easing type, periodic sequence, and disturbance
Select the modification method (By/To/Times/Max/Min) and click "apply" to confirm batch modification

The following describes the exact process of modification:
The editor modifies each note selected in chronological order, assume that there are a total of **N** notes selected, and we have processed up to the **n**th note.
We consider a easing curve with starting coordinates (0,0) and ending coordinates (1,1), the type of the curve is determined by the type of easing you just filled in, then the editor will take out the y coordinate of the intersection between line x = ((n-1)/(N-1)) and the easing curve, call this y coordinate Y.
After that, calculate the base value X_n = (upper bound - lower bound)*Y+ lower bound, plus it with a random value between [-|disturbance|,+|disturbance|], and then multiplied by the value corresponding to a number located in periodic sequences (its position equals to n mod length-of-sequence), to get the real value Z_n
If the modification mode is By, the value x of the note is modified to $x+Z_n$, if the mode is To, it is modified to Z_n, if the mode is Times, it is modified to $x*Z_n$, if the mode is Max/Min, it is modified to Max/Min(x,Z_n)

For example, if the 5 notes are located at X=0, take the lower bound as -400, upper bound as 400, easing as 1, periodic sequence as {1,-1}, disturbance as 0 and modification as By, then we will get the 5 notes with the coordinates X={0,100,-200,300,-400}, and if the disturbance is taken as 30, the last X coordinate will be in the range between [-370,430]. Restore the disturbance to 0 and press apply again, then we get X={0,200,-400,600,-800}, because the modification method is By type, if we change to To type modification at this time and press apply again then we get X={0,100,-200,300,-400}
See a few simple applications below:


PhiEdit
200
MirrorY
4
25
1.0x
0
1.00
0
11
Beats:0.85
BPM:120.00
0.40/104.96s
yScaled
Untitled
Default
MultiNote Edit
dataType
X
lowerBound
0.0
upperBound
500
easing
1
Periodic Seq.
0 1 -1
disturb
0.0
editType
To
empty
delete
apply
3
2
1
v1.1-P1 Public @cmdysj


PhiEdit
200
MirrorY
4
25
1.0x
0
1.00
0
11
Beats:0.85
BPM:120.00
0.40/104.96s
yScaled
Untitled
Default
MultiNote Edit
dataType
X
lowerBound
-500
upperBound
500
easing
5
Periodic Seq.
1
disturb
100
editType
To
empty
delete
apply
3
2
1
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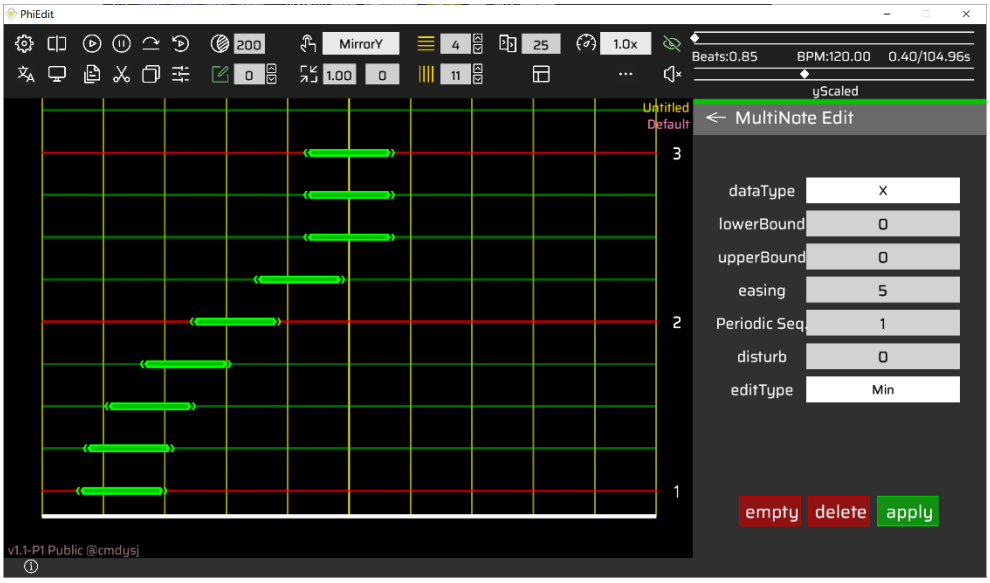
PhiEdit
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Min
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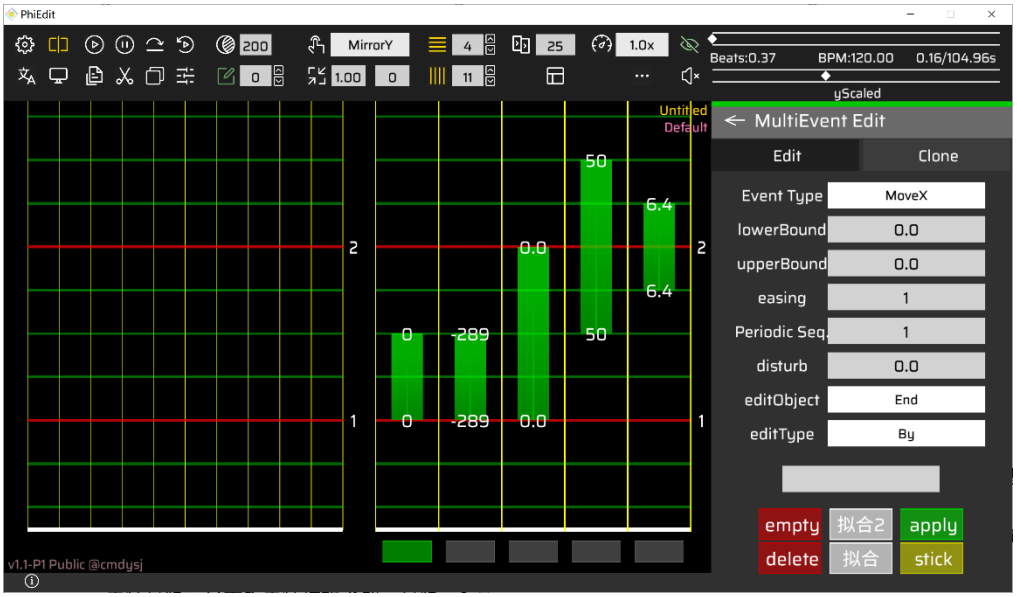
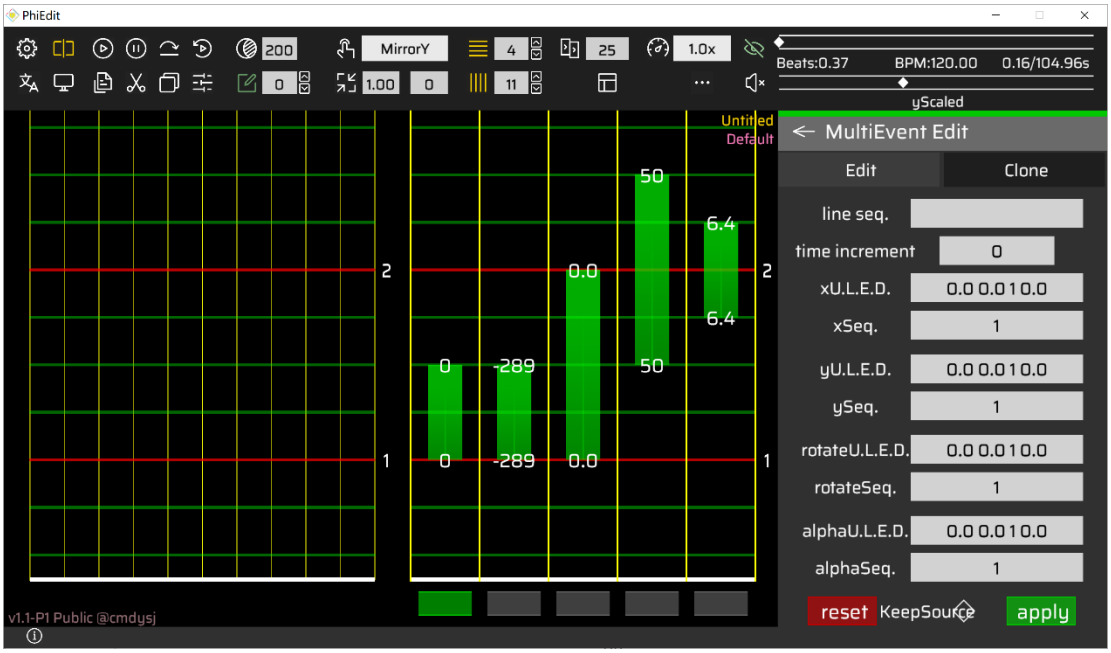
Events can be modified in the same way as the notes, and the values that can be modified are the **start value**, the **end value** or the **easing type** of the event.

Press stick for multi-selected events will conduct stick operation from front to back

A little difference is that multievent editing requires a specification of the event type to edit, you need to change “Event Type” box to the type of event you want to modify



Event Cloning: Click on the "Clone" column under MultiEvent Editor

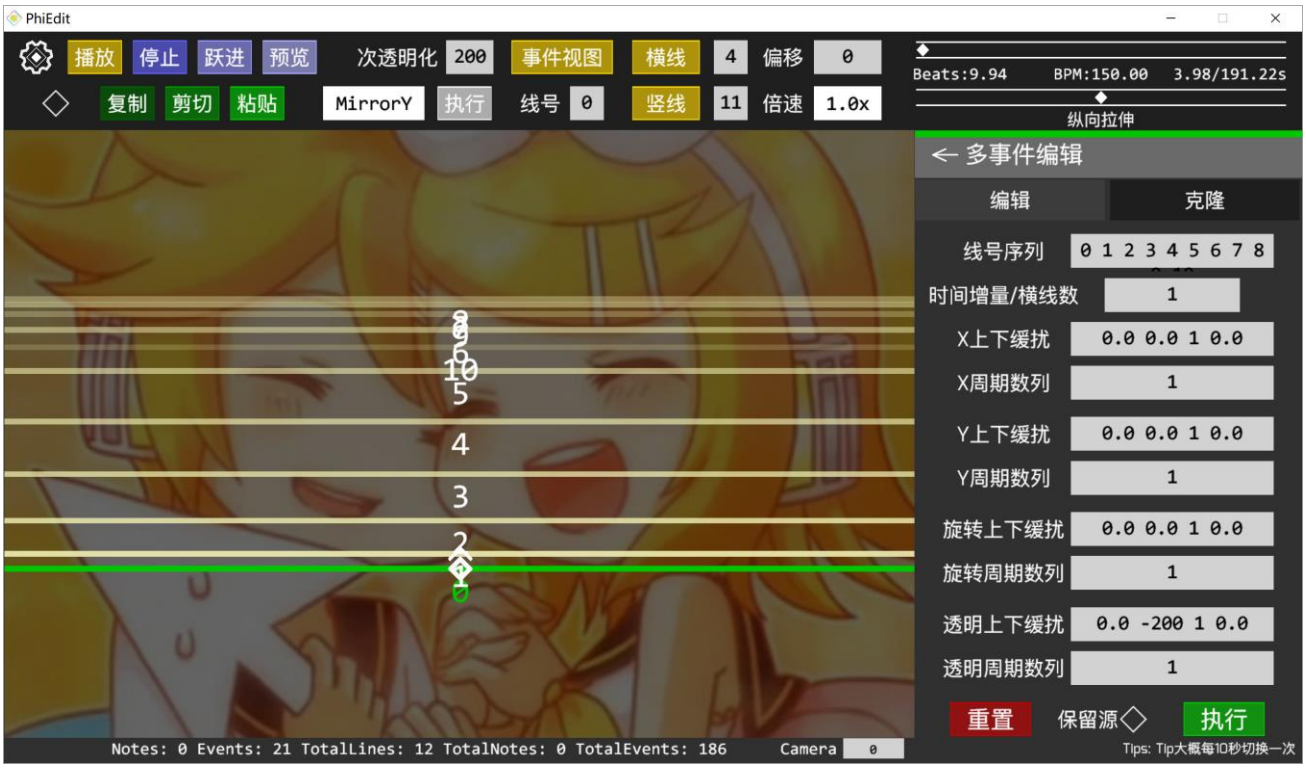


The purpose of it is to copy a number of events to a series of lines in a specific rule of modification.

“line seq.” requires a number of integers to be entered, indicating the number of the lines these events will be copied to.

“U.L.E.D” stands for lower bound, upper bound, easing type, and disturbance, time increment refers to the number of horizontal lines for each line processed will be the overall time of all events panned backwards, []Seq. stands for periodic sequence

The following picture shows a simple effect:



Here I gave line 0 an up and down sine vibration, and then cloned it to lines 0~10

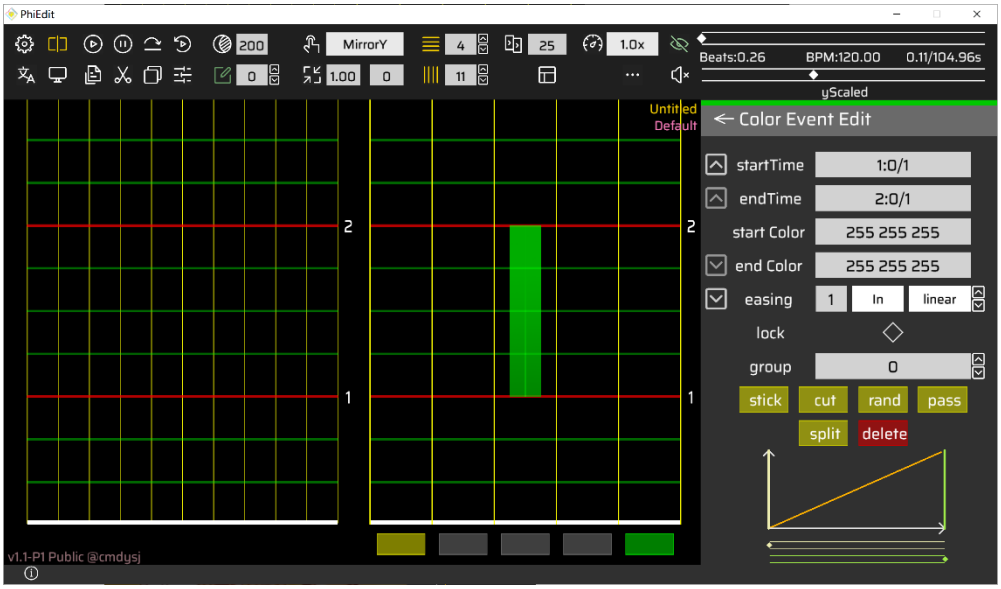
You can choose to keep the source (not by default), this line may lead to overlapping events

13.Special event

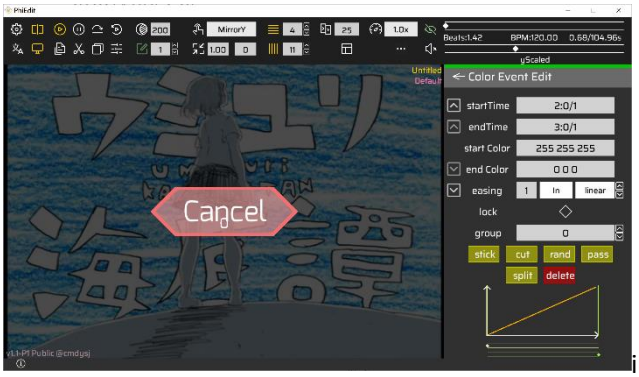
Select a line, change its material to an easy-to-see image (e.g. Cancel.png), and click on the rightmost layer button

Currently, RPE's Special events include X-axis scale event, Y-axis scale event, color event, paint event, text event and incline events(incline events can only be edited in json file)

The placement, editing, deletion, and batch editing of special events are no different from those of ordinary events, except that the color event starts and ends with RGB values, which are three integers separated by spaces.

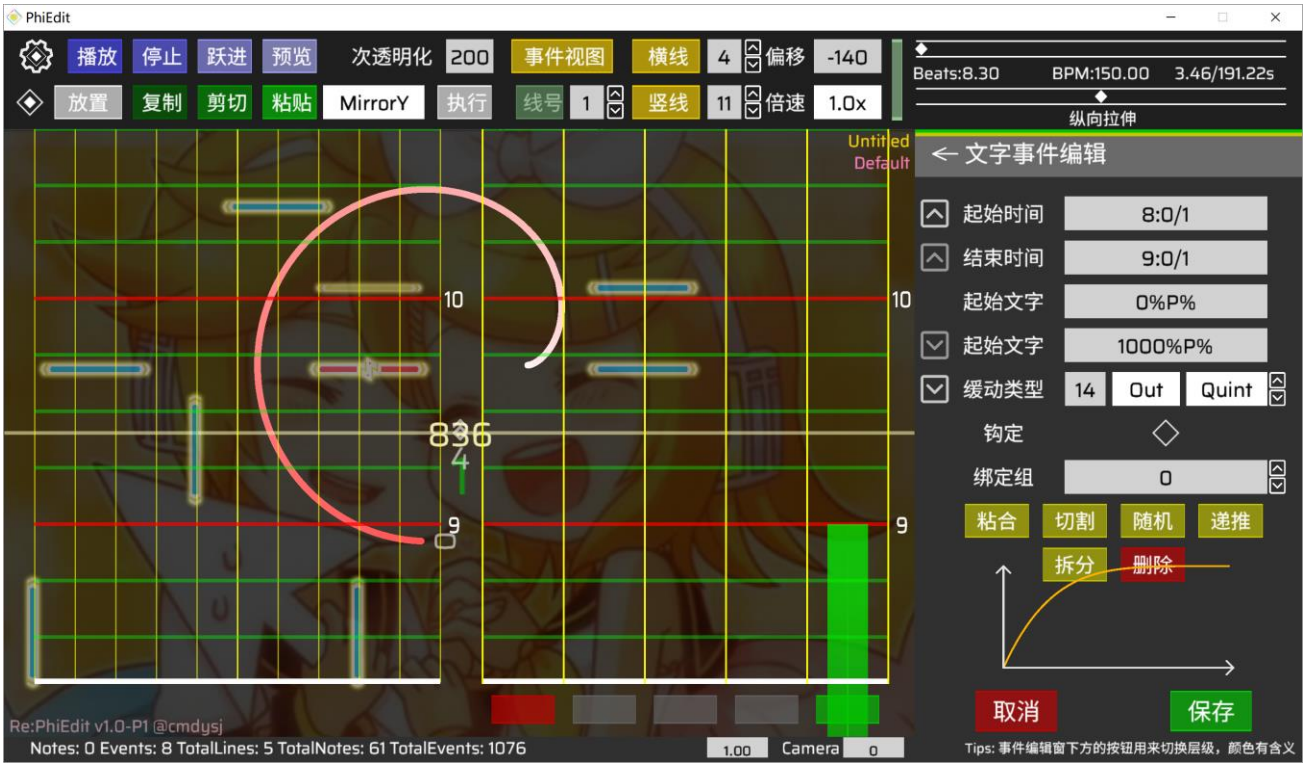


Let’s see a practical effect:



initial

on Xscale 1.0→3.0, Yscale 1.0→0.5, Color white to black

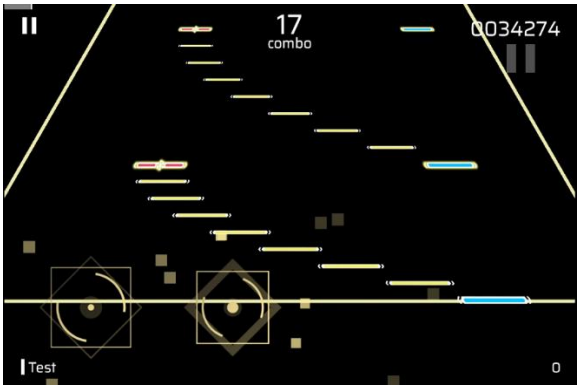


The paint event controls the brush size, which defaults to 0. A negative number means that the line's canvas is cleared at this moment. The color of the brush is the color of the line, its transparency is the alpha of the line.

The text event controls the displayed text and is empty by default. If the starting text is prefixed to the ending text or vice versa, the text will change one by one according to the easing type, for example, ""→"HelloWorld!", with a easing type of 3, it will change from ""to "H", "He",... , "HelloWorld!". If the specified start and end are numbers, you can insert the command character %P% anywhere, and the text will be incremented or decremented in numeric form according to the easing type, if the start and end are integers, then the number displayed in change process is also an integer, otherwise it is 3 decimal places. The position, color, transparency, angle of the text equal to that of the line, scale events can control the size of text.

If a line has any paint event or text event, it’s own texture will always stay invisible

In v1.1, incline event has been added, which simulates the rotation of the judge line along x-axis and can only be edited by modifying the chart file (xx.json/judgeLineList/extended/inclineEvents). Note that it does not work for Holds.



14.FAQ

1. Can't open software, shows missing xxxxxxx.dll
Requires installation of VC runtime library and DirectX, reboot is needed after installation

2. The window is too big
Open Settings.txt, reduce the value after “WindowSize”, save and restart the software

3. The font of text is strange
Double click to install all fonts under /Resources/fonts

4. Flashback when adding a chart
Possible cause 1: the music or illustration file has error in format, commonly seen in the direct change of suffix name, this problem can be solved by using format conversion tools (such as format factory)
Possible cause 2: The path where RPE is stored contains non-English characters, solution: put it into a pure English path, such as C:\RPE
Possible reason 3: No base BPM is entered, or wrongly entered, please fill in a positive number