

# ced 1.6.0

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The latest release of `ced` is `ced 1.6.0`. It is available [by clicking here](#). Below is a description of the changes.

## 1 Bank Views

The data bank views have changed. Again. They used to be independent windows, not confined to the `ced` desktop. Then we got a request to tie them to the desktop, so that they are not easily lost. Now I have requests to liberate them again, to make them free-floating. This we have done. Incompatible requests are what makes this so much fun.



Figure 1: Dealing with incompatible requests is fun!

However, at `ced` we want people to like us, desperately. So we try to accommodate all requests, even those that are incompatible. To this end we have added an option to the `Options` menu to allow you to toggle the data bank view behavior. `ced` will remember your choice. (On *that* machine for *that* user).

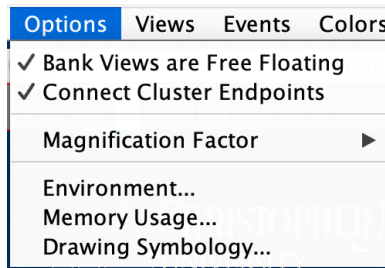


Figure 2: Have it your way.

There is another new option in the **Options** menu as seen above, to address another incompatible request. Some like (when relevant) the endpoints of a cluster to be connected as this is a useful debugging tool. Others find it unseemly if not offensive. That is now a user option that will also be remembered. (On *that* machine for *that* user).

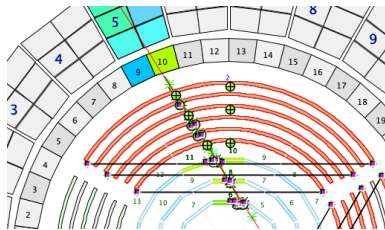


Figure 3: If you don't like those lines, we've got your back.

In addition to this reconfiguration, we responded to another request to make the data tables sortable. So by clicking on a column header you can sort based on that column. Clicking again will switch from an ascending to a descending ordering. In the figure below, a user has purposely or accidentally clicked on the label “wire” in the header.

HitBasedTrkg:DNHits

next prev seq # 1 true # 1

	id	status	sector	superlayer	layer	wire	TDC	jitter	trkDoca	docaError	LR	LoCk	LoCY	X	Z	clusterID
64	81	0	3	3	5	23	426	0	0.77155	0.31267	1	5.00000	27.13546	-81.07178	361.29660	9
66	82	0	3	3	6	23	153	0	0.13778	0.31267	1	6.00000	26.55811	-82.15489	363.16232	9
3	146	0	1	5	1	24	227	0	0.44520	0.47015	1	1.00000	28.29016	-107.9784	492.02441	1
5	148	0	1	5	3	24	312	0	0.71232	0.47015	1	3.00000	28.29016	-107.9784	497.63525	1
7	150	0	1	5	5	24	386	0	0.97943	0.47015	1	5.00000	28.29016	-107.9784	503.24609	1
65	80	0	3	3	5	24	397	0	0.68888	0.31267	-1	5.00000	28.29016	-78.90557	361.29660	9
4	147	0	1	5	2	25	580	0	0.97943	0.47015	-1	2.00000	28.86751	-106.4098	494.82983	1
6	149	0	1	5	4	25	397	0	0.71232	0.47015	-1	4.00000	28.86751	-106.4098	500.44067	1
8	151	0	1	5	6	25	345	0	0.44520	0.47015	-1	6.00000	28.86751	-106.4098	506.05151	1
61	78	0	3	3	3	25	411	0	0.57866	0.31267	1	3.00000	29.44486	-76.73936	357.56516	9
63	79	0	3	3	4	25	154	0	0.05511	0.31267	-1	4.00000	28.86751	-77.82246	359.43088	9
62	77	0	3	3	3	26	464	0	0.88177	0.31267	-1	3.00000	30.59956	-74.57314	357.56516	9
9	152	0	1	6	1	27	468	0	0.50034	0.49168	-1	1.00000	31.75426	-102.6004	514.29089	2
10	153	0	1	6	2	27	338	0	1.10075	0.49168	1	2.00000	31.17691	-104.36360	517.22485	2
11	154	0	1	6	3	27	522	0	0.80055	0.49168	-1	3.00000	31.75426	-102.6004	520.15875	2
12	155	0	1	6	4	27	288	0	0.80055	0.49168	1	4.00000	31.17691	-104.36360	523.08271	2
13	156	0	1	6	5	27	607	0	1.10075	0.49168	-1	5.00000	31.75426	-102.6004	526.02667	2
14	157	0	1	6	6	27	303	0	0.50034	0.49168	1	6.00000	31.17691	-104.36360	528.96063	2
59	75	0	3	3	1	27	242	0	0.38577	0.31267	1	1.00000	31.75426	-72.40694	351.83171	9
60	76	0	3	3	2	27	185	0	0.24800	0.31267	-1	2.00000	31.17691	-73.49004	355.69943	9
85	43	0	3	5	5	31	768	0	1.84488	0.47015	1	5.00000	36.37307	-85.17759	503.24609	12
82	39	0	3	5	3	32	466	0	0.67779	0.47015	1	3.00000	37.52777	-81.92033	497.63525	12
83	41	0	3	5	4	32	646	0	1.31750	0.47015	1	4.00000	36.95042	-83.60896	500.44067	12
86	42	0	3	5	5	32	710	0	1.20454	0.47015	-1	5.00000	37.52777	-81.92033	503.24609	12
87	44	0	3	5	6	32	525	0	0.56482	0.47015	-1	6.00000	36.95042	-83.60896	506.05151	12
92	49	0	3	6	5	32	273	0	0.03241	0.49168	-1	5.00000	37.52777	-85.56800	526.02667	13
93	50	0	3	6	6	32	346	0	0.01473	0.49168	1	6.00000	36.95042	-87.33125	528.96063	13
80	57	0	3	5	1	33	282	0	0.48931	0.47015	-1	1.00000	38.68247	-78.66306	492.02441	12
81	38	0	3	5	2	33	371	0	0.15041	0.47015	1	2.00000	38.10512	-80.35169	494.82983	12
84	40	0	3	5	4	33	821	0	1.73191	0.47015	-1	4.00000	38.10512	-80.35169	500.44067	12
90	47	0	3	6	3	33	184	0	0.02357	0.49168	-1	3.00000	38.68247	-82.16151	520.15875	13
91	48	0	3	6	4	33	228	0	0.02357	0.49168	1	4.00000	38.10512	-83.92475	523.08271	13
88	45	0	3	6	1	34	273	0	0.01473	0.49168	-1	1.00000	39.83717	-78.75502	514.29089	13

Visibility

- ☒ id
- ☒ layer
- ☒ trkDoca
- ☒ LoCY
- ☒ status
- ☒ wire
- ☒ docaError
- ☒ X
- ☒ sector
- ☒ TDC
- ☒ LR
- ☒ Z
- ☒ superlayer
- ☒ jitter
- ☒ LoCk
- ☒ clusterID

Figure 4: Data banks are free-floating windows again. And they are sortable.

## 2 Kalman Filter Trajectories

There is a new checkbox to control the display of such trajectories in the central views.

display Banks

Visibility

- ☒ Single
- ☐ Accum.
- ☒ Reg HB
- ☒ Recon Hits
- ☒ CVTRecKF Traj
- ☒ ADC Data
- ☐ Cosmic Tracks
- ☒ Reg TB
- ☒ CVTRec Tracks
- ☒ CVTP1 Tracks
- ☒ Clusters
- ☒ Crosses
- ☒ CVTRec Traj
- ☒ CVTP1 Traj

Figure 5: The CVTRecKF Traj checkbox is new.

## 3 Threading Model

ced is a bit snappier event-to-event because of a new threading model. Some calculations (including swimming) were being performed in the main GUI thread, an unforgivable violation of all that is sacred in GUI programming. This should not be a worrisome change, because we have never heard of bugs being introduced into an application because of a new threading model. Never.

## 4 Data Model

`ced` had a data model that predates `HIPO`. It was from the days when it was `evio` or nothing. In fact, `cnuphys` created the first version of `jevio` because in 2007 to read `evio` you had to use the abomination known as C++. The CNU `jevio` was immediately hijacked by the JLAB DAQ group, but we're not bitter. When `HIPO` came along it was patched onto this model with software duct tape. It was getting harder and harder to maintain, so a new data model has been implemented. This should not be a worrisome change, because we have never heard of bugs being introduced into an application because of a new data model. Never.

## 5 Swimmer

`ced` uses the new swim package, `CLAS12Swim`, for its trajectories. `CLAS12Swim` is inherently faster. Also, swims are now handed off to separate threads. What could go wrong?

## 6 True Event Number

Finding an event by the “true” event number rather than the sequential number in the file is faster and more reliable.

## 7 Still there, but hidden

The RTPC and Alert views have been placed in hibernation. We can wake them up when we get updated information.

## 8 Report Bugs!

Please report ([david.heddle@cnu.edu](mailto:david.heddle@cnu.edu)) bugs!

## 9 Requests Accepted!

Please submit ([david.heddle@cnu.edu](mailto:david.heddle@cnu.edu)) your requests! What is missing from `ced`? How can we make it more useful? What new views or modifications to existing views would help you debug your hardware and/or software? We are at your service.

## 10 It's all fun and games, until your code gets reviewed.

There is a change to the `ced wEiRd` submenu. `Eliza` has been retired. She has been replaced by `Wordle`, which, when you're on shift, is much more fun than comparing histograms to their reference values.

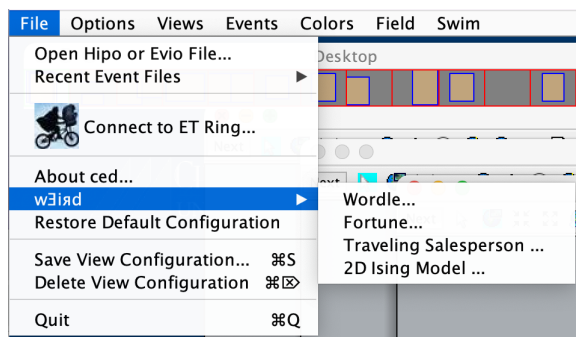


Figure 6: Eliza the psychoanalyst has retired. Wordle has taken her slot.



Figure 7: This is just unacceptable.