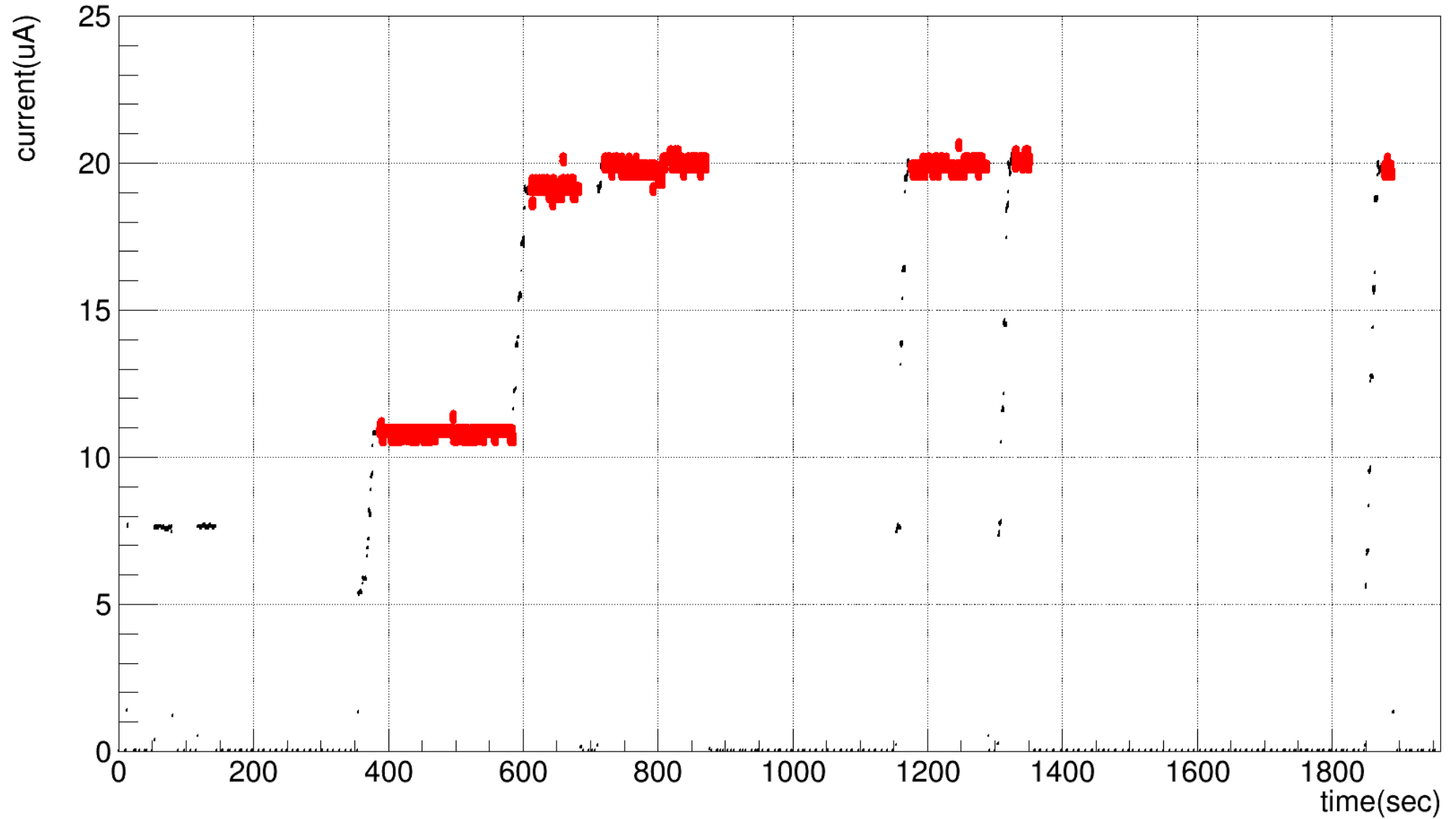


# Beamtrip cut

Shujie Li, 03.2018



# Match scaler info with event entry

1. in Ttree, read events with ev scaler update :

LeftBCMev.isrenewed=1

Find corresponding BCM counts, clock counts and entry number

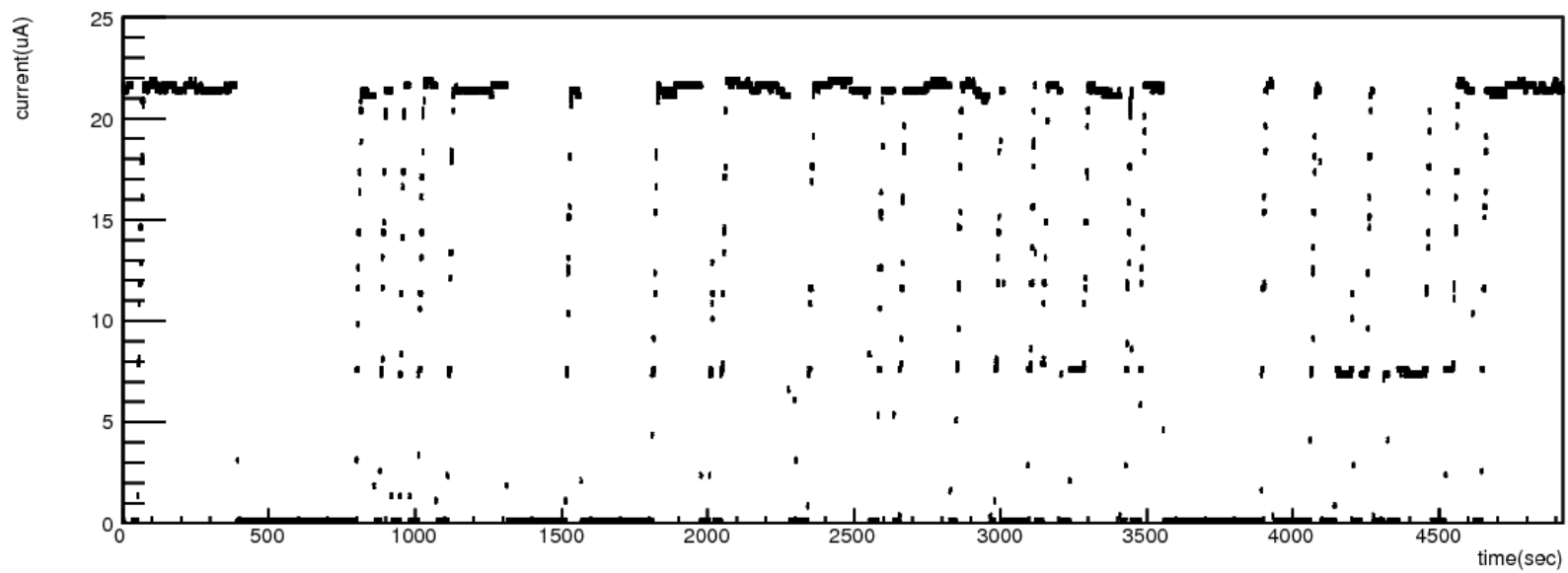
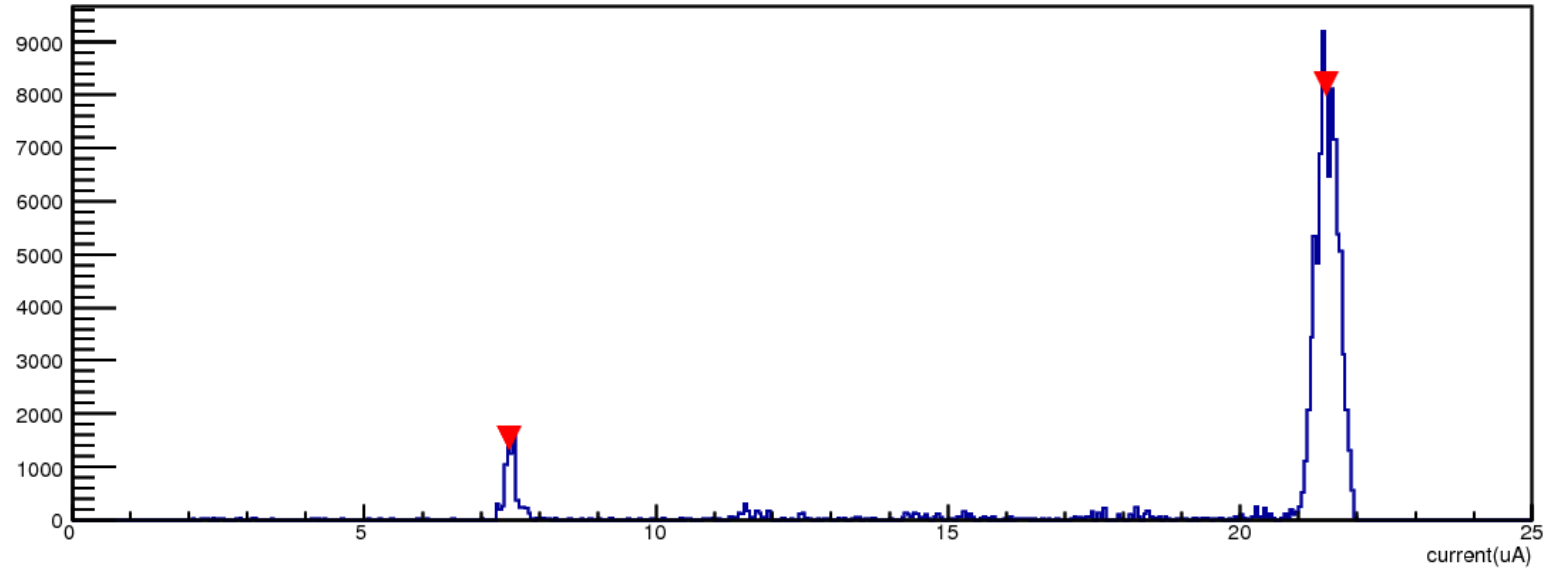
2.  $current[ ii ] = (bcm\_cnts [ ii ] - bcm\_cnts [ ii-1 ])/(clk\_cnts [ ii ] - clk\_cnts [ ii-1 ])$

```

*****
*      Row      * evRightdnew * evRightdnew_r* V1495ClockCount * evRightLclock * RightBCM.isrenewed *
*****
*          0 *          0 *          0 *          775510 *          0 *          1 *
*          1 *          0 *          0 *          777803 *          0 *          0 *
*          2 *          0 *          0 *          781590 *          0 *          0 *
*
*          .....
*
*          96 *          0 *          0 *          1162229 *          0 *          0 *
*          97 *          0 *          0 *          1167873 *          0 *          0 *
*          98 *          0 *          0 *          1168488 *          0 *          0 *
*          99 *          247812 *          0 *          1169166 *          394511 *          1 *
*         100 *          247812 *          0 *          1170873 *          394511 *          0 *
*         101 *          247812 *          0 *          1176499 *          394511 *          0 *
*
*          .....
*
*          196 *          247812 *          0 *          1532212 *          394511 *          0 *
*          197 *          247812 *          0 *          1532930 *          394511 *          0 *
*          198 *          247812 *          0 *          1535152 *          394511 *          0 *
*          199 *          480477 *          65026.481 *          1540206 *          765550 *          1 *
*          200 *          480477 *          65026.481 *          1548785 *          765550 *          0 *
*          201 *          480477 *          65026.481 *          1549266 *          765550 *          0 *
*
*          .....
*          .....
*          .....
*
*         88851 *          212660871 *          0 *          407787390 *          406384879 *          0 *
*         88852 *          212660871 *          0 *          407800641 *          406384879 *          0 *
*         88853 *          212660871 *          0 *          407822477 *          406384879 *          0 *

```

- Identify beam on current with TSpectrum



# Apply cuts

- Go over recorded current per evscaler update to select entries with
  - $\text{abs}(\text{current} - \text{peak}[i]) < 1 \text{ uA}$
  - Above condition is true for more than 10 seconds (assume target takes 10 secs or less to reach equilibrium)
- Save all selected events to TEventlist

# Analysis with TEventlist

- `T → SetEventList(list);` //load the selected events
- `T → Draw()` and `T → Project()` will only look at events on the list
- For event by event analysis, do
  - `nn=list → GetN();`
  - `for(i=0;i<nn;i++){`
    - `j=list->GetEntry(i);`
    - `T->GetEntry(j);`
    - `.....`
  - `}`

# Marathon kin3 tritium density vs time

