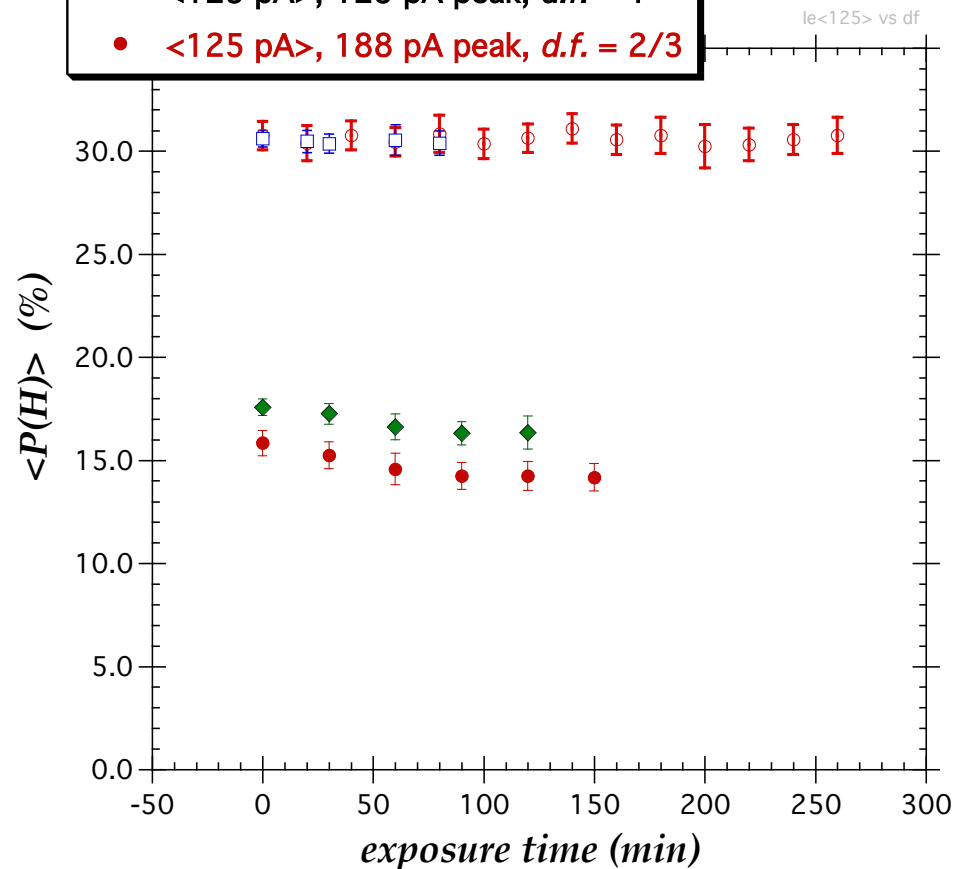


- 
- A 1ms CH4 +AC 100mV? HD 0% f:H-02
- CH 4t= 3.33ms 1/4t=300.3 Hz  
 1: 0.000 V 2: 0.00 V OFFSET +=199.99 Hz  
 1: 100mV 4:100mV

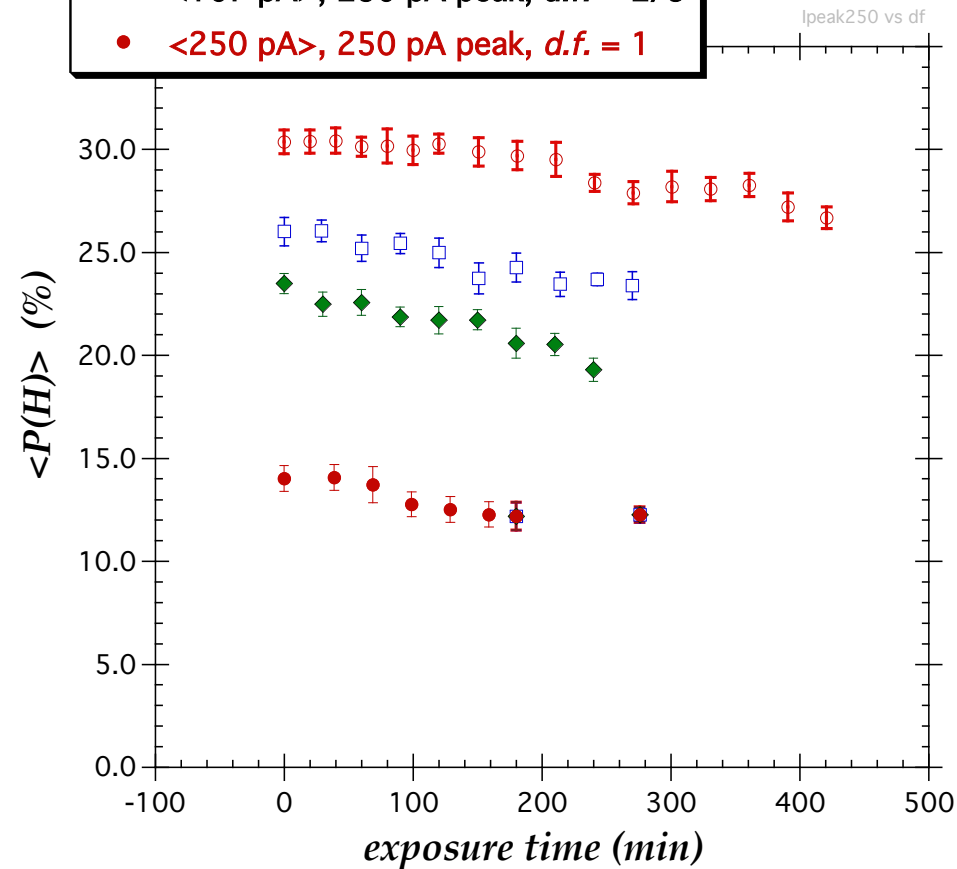
- fixed average current  $\langle I_e = 125 \text{ pA} \rangle$  :

- $\circ$   $\langle 125 \text{ pA} \rangle$ , 188 pA peak,  $d.f. = 2/3$
- $\square$   $\langle 125 \text{ pA} \rangle$ , 188 pA peak,  $d.f. = 2/3$
- $\blacklozenge$   $\langle 125 \text{ pA} \rangle$ , 125 pA peak,  $d.f. = 1$
- $\bullet$   $\langle 125 \text{ pA} \rangle$ , 188 pA peak,  $d.f. = 2/3$



- fixed peak current  $I_{\text{peak}} = 250 \text{ pA}$  :

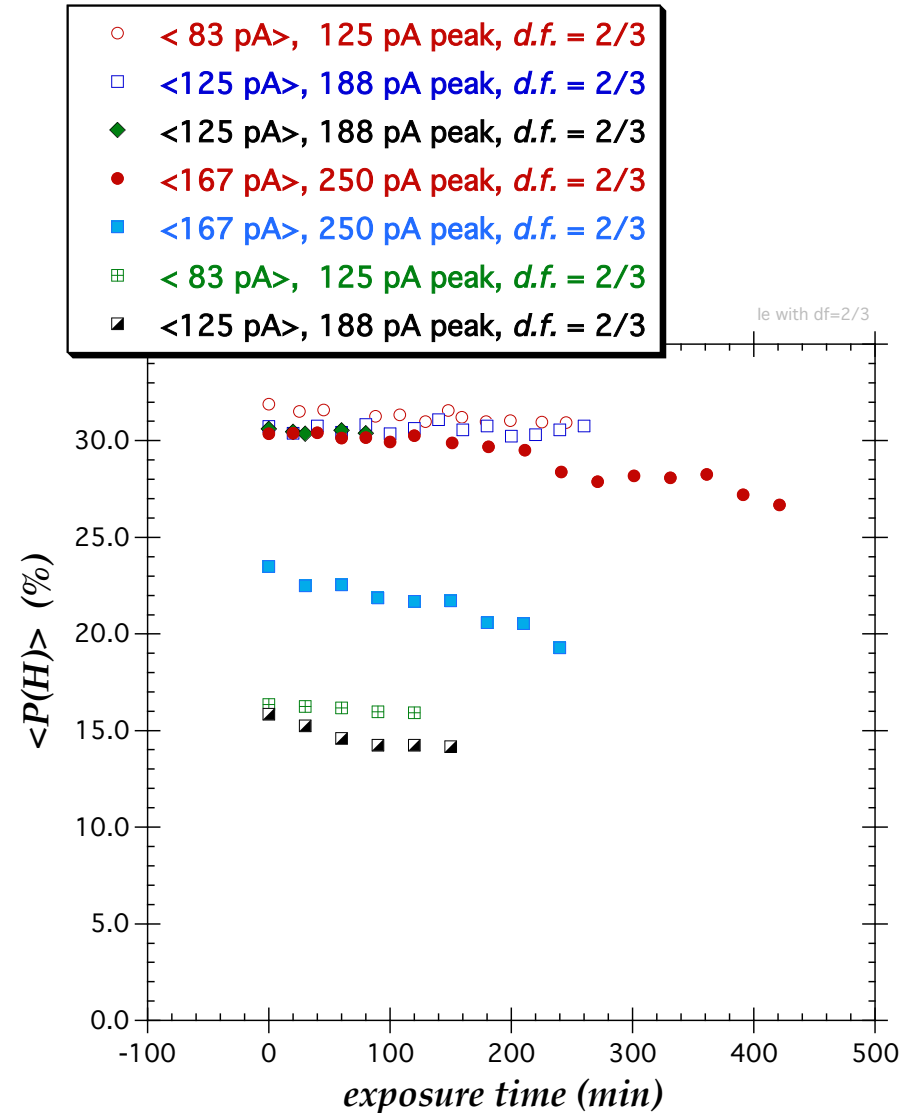
- $\circ$   $\langle 167 \text{ pA} \rangle$ , 250 pA peak,  $d.f. = 2/3$
- $\square$   $\langle 83 \text{ pA} \rangle$ , 250 pA peak,  $d.f. = 1/3$
- $\blacklozenge$   $\langle 167 \text{ pA} \rangle$ , 250 pA peak,  $d.f. = 2/3$
- $\bullet$   $\langle 250 \text{ pA} \rangle$ , 250 pA peak,  $d.f. = 1$



- $P(H)$  at fixed  $d.f. = 2/3$  :

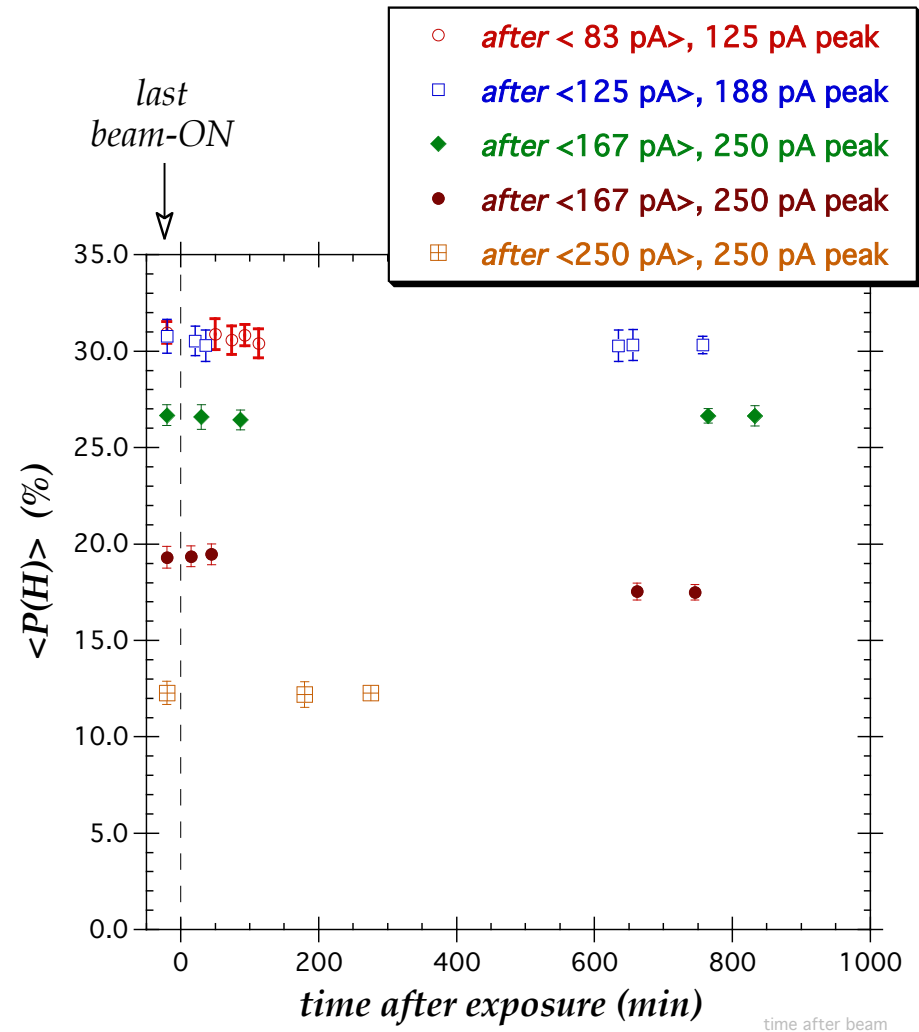
## Status :

- at 1/8 nA,  $dP/dt \sim \text{very small}$
- but at higher currents,  $P(H)$  begins to drop
- no improvement with standard *coarse* beam-blanking



- $P(H)$  after exposure stops:

- ↔ no evidence for permanent radiation damage
- ↔ polarization loss is generated by a transient condition when beam electrons are present; time constant is smaller than 3.3 ms



- **outlook for the last week:**

- study exposure with new USER-MODE utility that could blank the beam for 0.33 ms periods ~ factor of 10 smaller than previous tests (*hopefully – never used before*)
- test  $dP/dt$  under different holding fields  $\Leftrightarrow$  dependence on atomic electron polarization
- test  $dP/dt$  dependence on current
  
- *Run 3 ends Dec 17<sup>th</sup>*
- *Dec 18: last day to remove the cave-2 roof*
- *Dec 18: extract the target*
- *Dec 19 – 21: bring cryostats to a safe state for the shutdown*