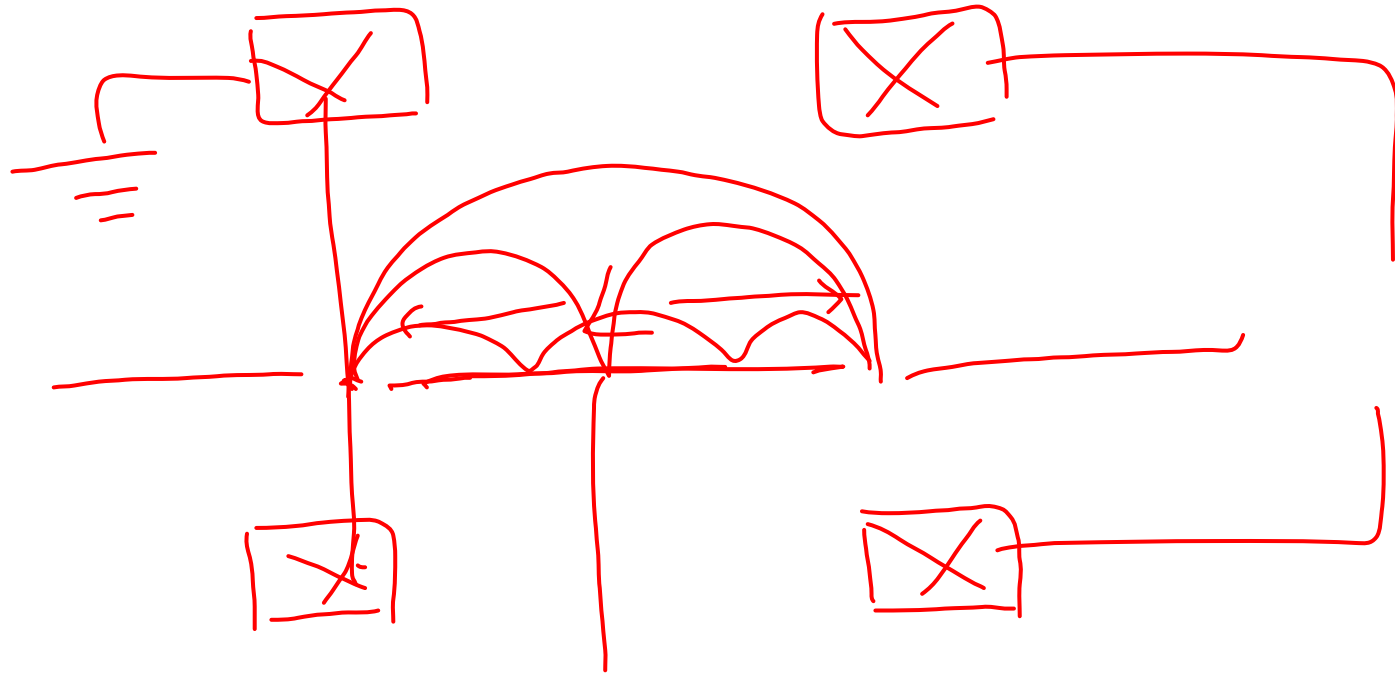


$V_A > V_B$   
 consider  
 hole

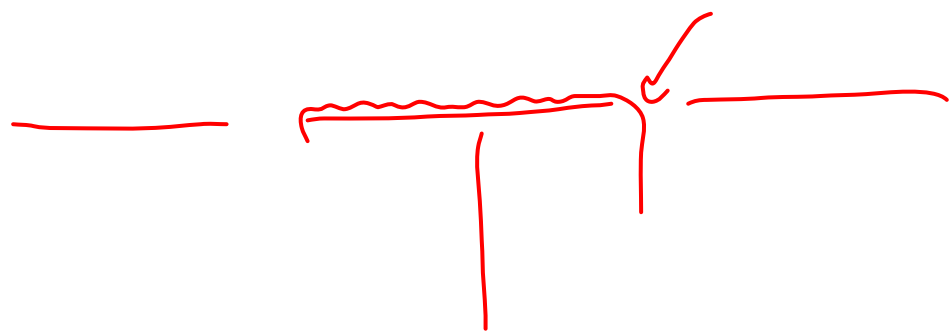
Hall Effect <sup>B</sup>  
Quenching of  
 the Hall Effect



$$\textcircled{L} = 2 R_C$$

fixed  $\textcircled{L} = 4 R_C$

$$\textcircled{L} = 6 R_C$$

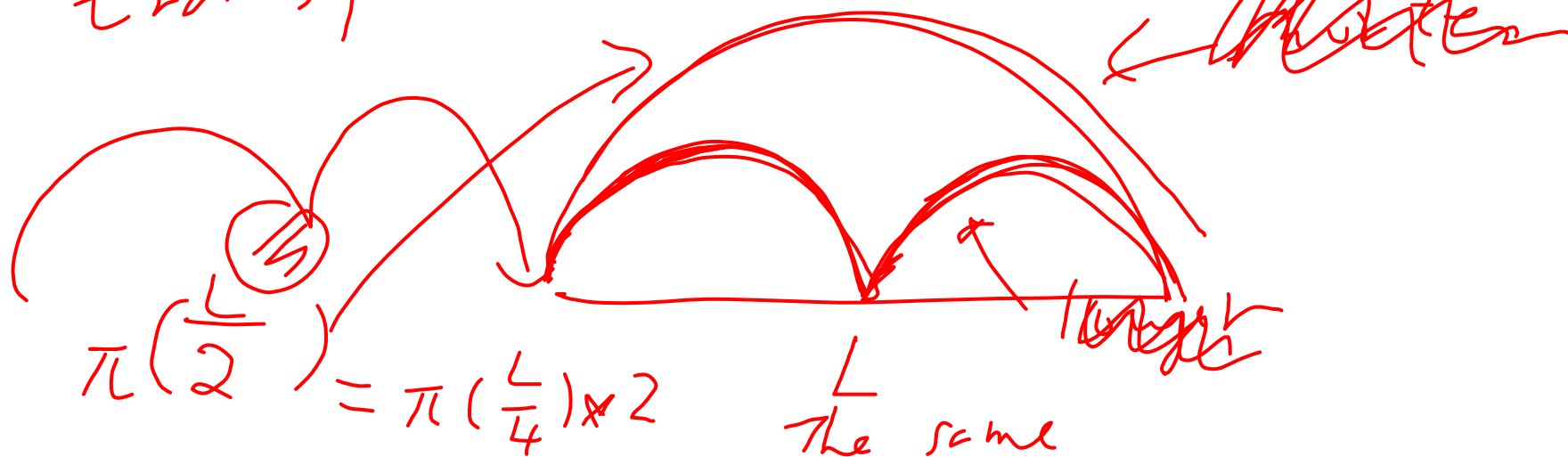


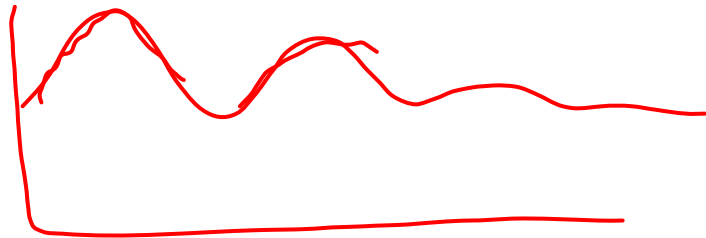
Total length

low-field

adiabatic  
transport

long

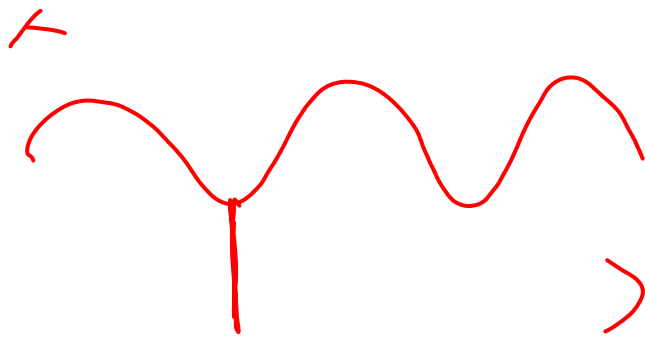




noise



Repeat Experiments



periodic noise

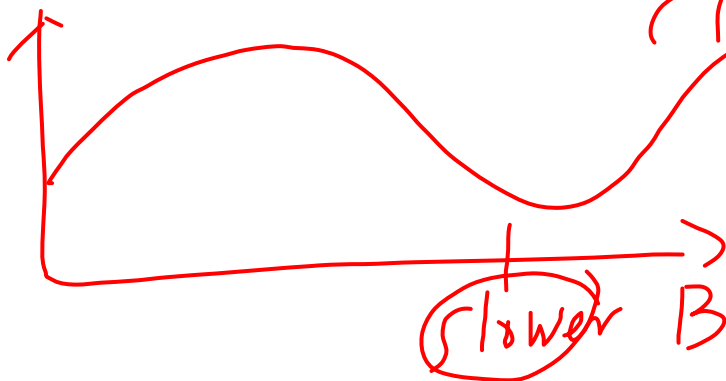
Reproducible

$> B$   
(T)

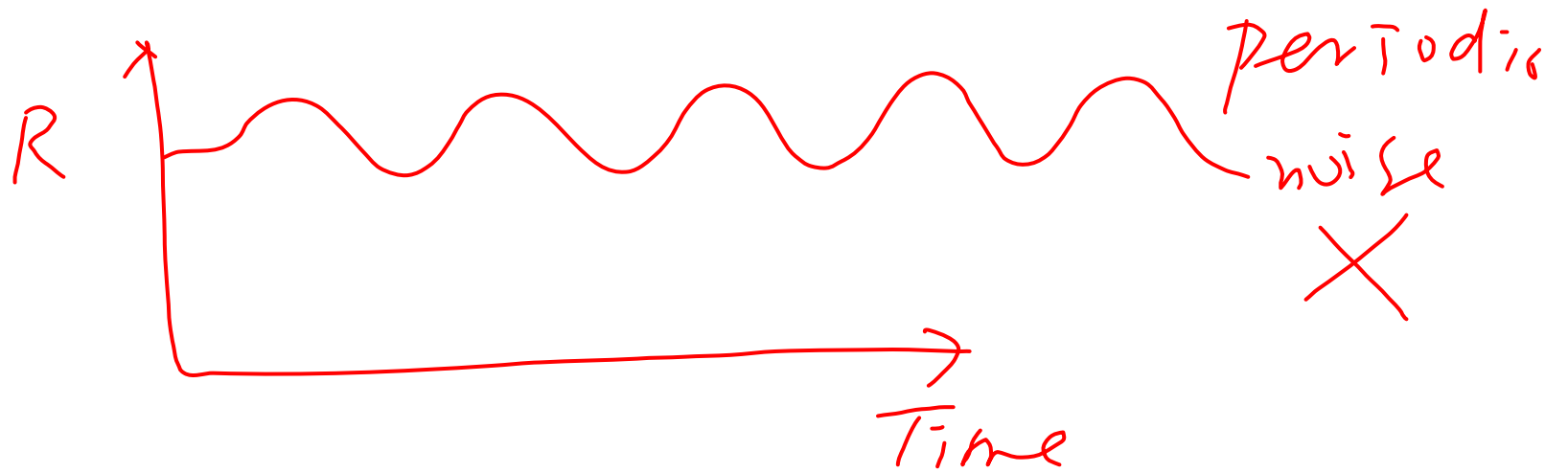
Sweep rate

$B: 0.1 T/min$

$B: 0.2 T/min$



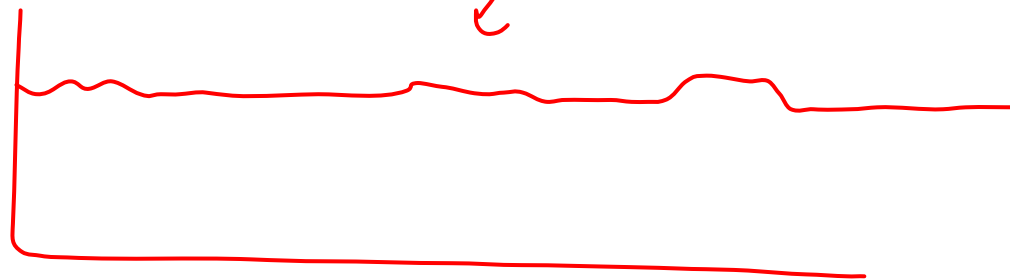
slower B

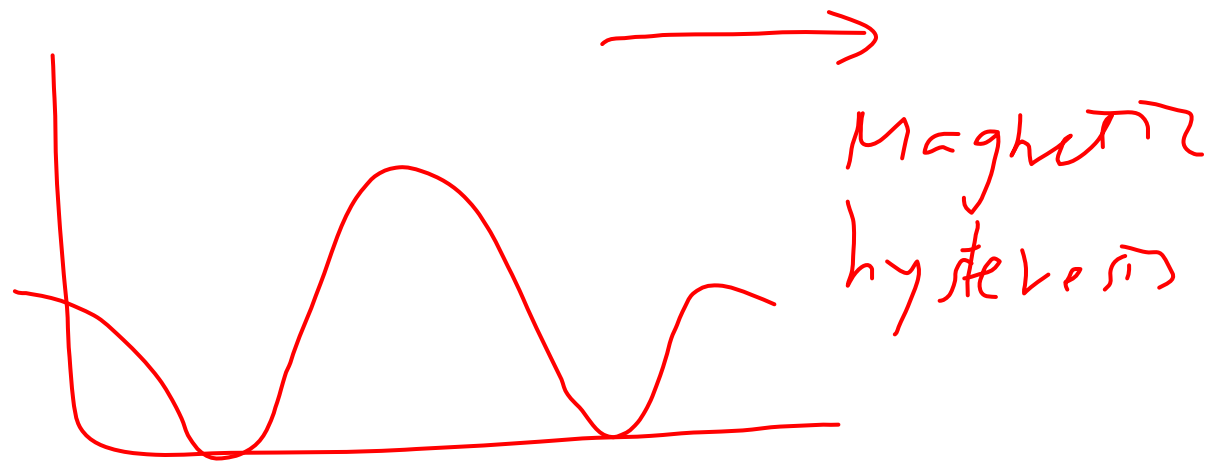
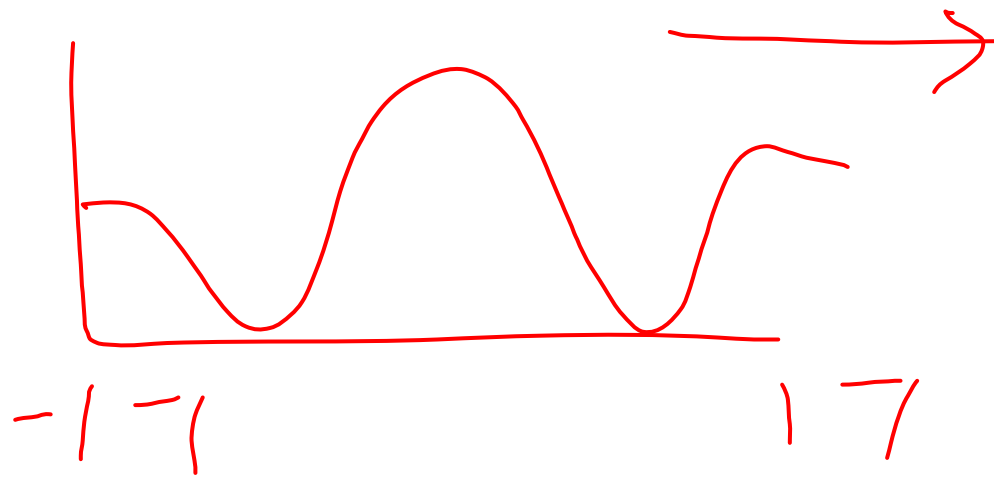


keep everything  
fixed

$R$  (Time)

noise random

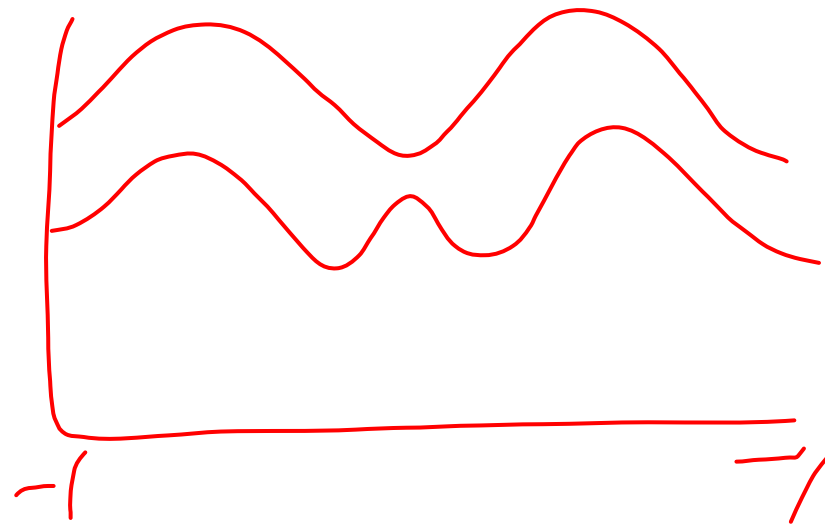




Magnetic  
hysteresis

small shift





$V_g = 0.01 V$

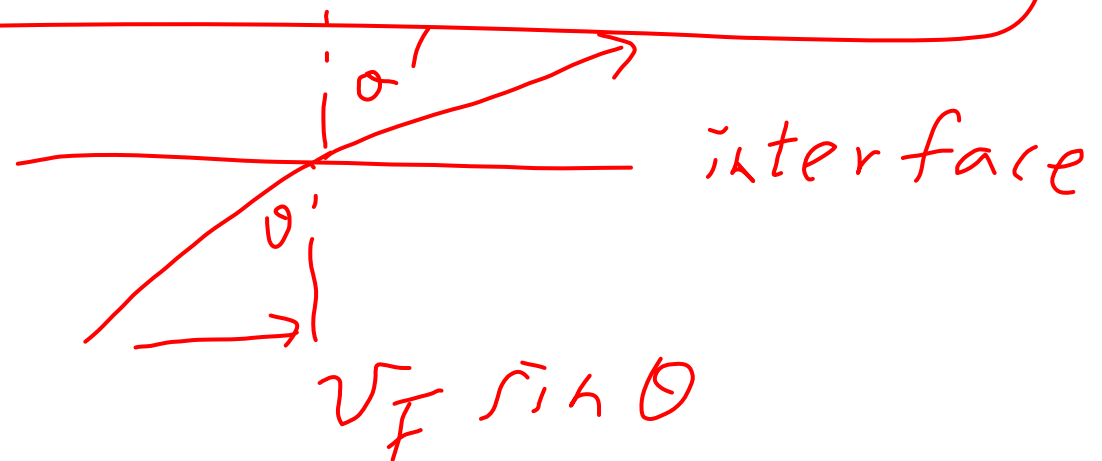
$V_g = -0.2 V$

Sweep #

B	-1	~	1 T	1
B	1	~	-1 T	2
B	-1	~	1 T	3
B	1	~	-1 T	4
1, 3, 5,	-	-	the direction	
2, 4, 6.	-	-	same direction	



$$v_F \sin \theta = v_F' \sin \theta'$$



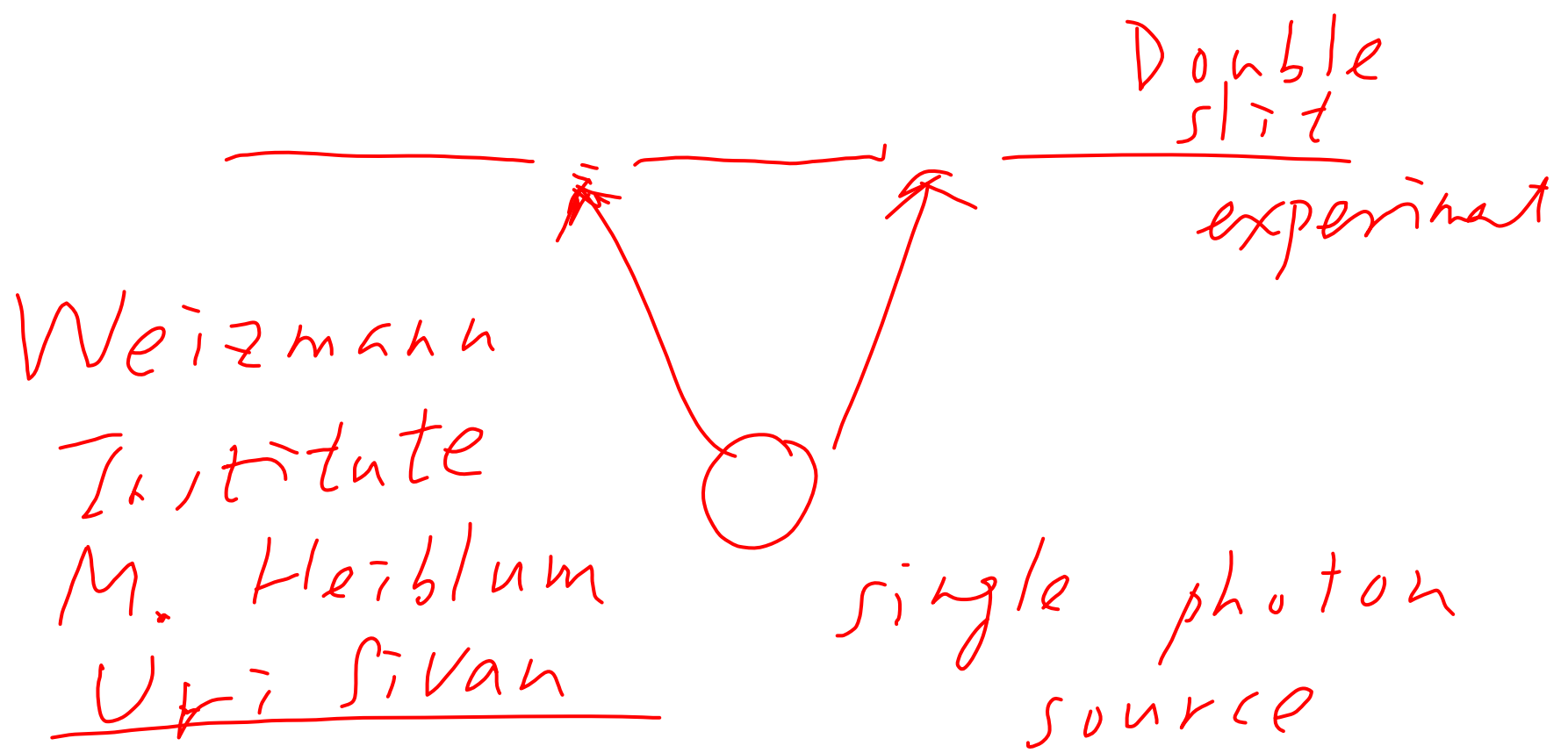
$$m^* v_F = \hbar k_F$$

$$E_F = \frac{\hbar^2 k_F^2}{2 m^*} = \left( \frac{\pi \hbar^2}{m^*} \right) \cdot \left( N_{2D} \right)$$

$$k_F = \sqrt{2 \pi N_{2D}}$$

# Which path detector

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2:20 - 3:20 pm

26th October 2009

Dr. Brian Dolan

Duality and its use

in quantum field theory

Room 833

You are encouraged to  
attend his talk.









