Moving Optics

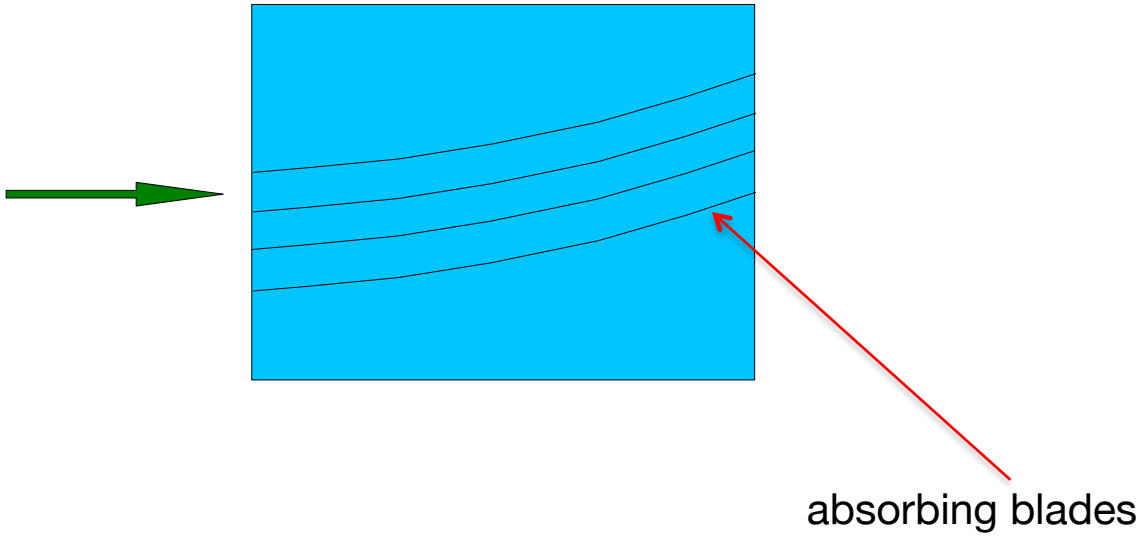
- Velocity selector
- Disk Chopper
- Fermi Chopper

Velocity Selectors

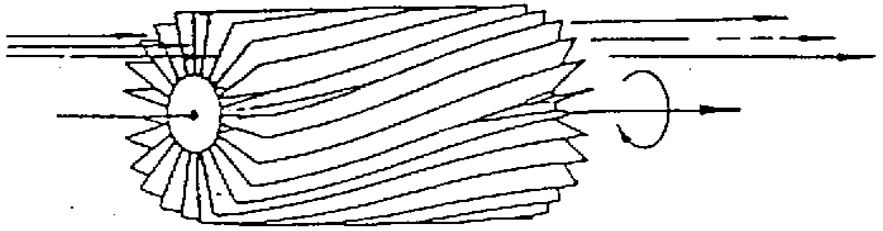
-

Select the neutron energy you want

VELOCITY SELECTORS

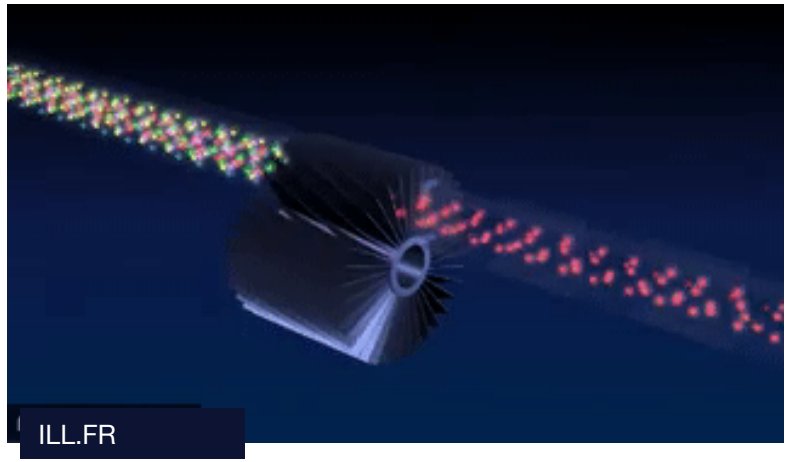


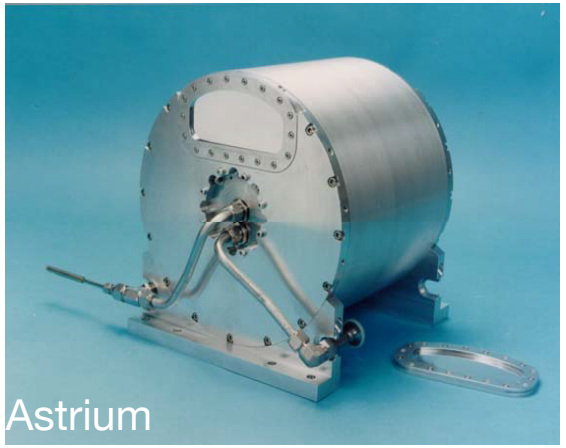
VELOCITY SELECTORS



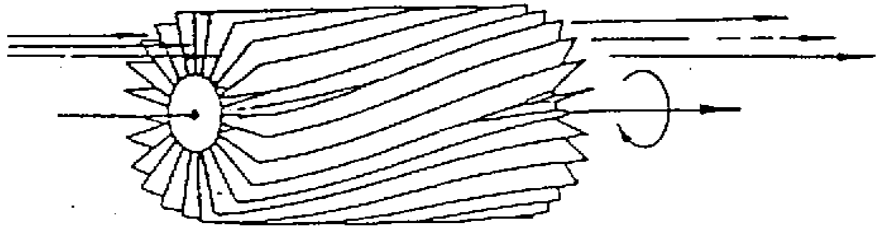
VELOCITY SELECTORS

‘broad’ monochromatization $\delta\lambda/\lambda \approx 10\ \%$





VELOCITY SELECTORS



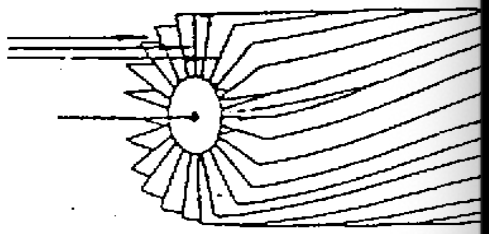
```
Example: V_selector(xwidth=0.03, yheight=0.05, zdepth=0.30, radius=0.12, alpha=48.298, length=0.25, d=0.0004, nu=20000, nslit=72)
These are values for the D11@ILL Dornier 'Dolores' Velocity Selector (NVS 023)
```

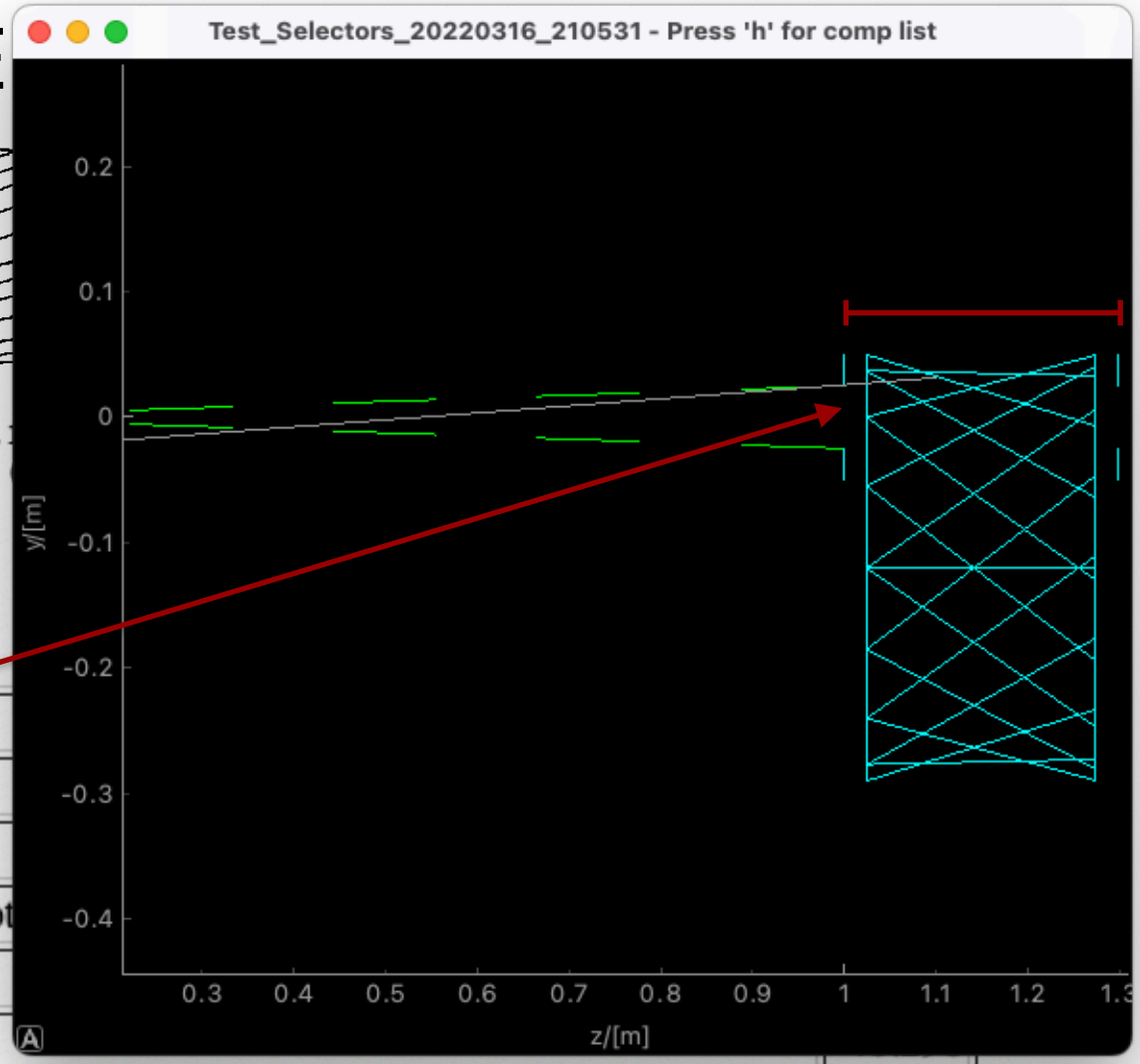
Input parameters

Parameters in **boldface** are required; the others are optional.

Name	Unit	Description	Default
xwidth	m	Width of entry aperture	0.03
yheight	m	Height of entry aperture	0.05
zdepth	m	Distance between apertures, for housing containing the rotor	0.30
radius	m	Height from aperture centre to rotation axis	0.12
alpha	deg	Twist angle along the cylinder	48.298
length	m	Length of cylinder/rotor (less than zdepth)	0.25
d	m	Thickness of blades	0.0004
nu	Hz	Cylinder rotation speed, counter-clockwise, which is ideally 3956*alpha*DEG2RAD/2/PI/lambda/length	300
nslit	1	Number of Soller blades	72

VELOCITY SE





Example: V_selector(xwidth=0.03, yheight=0.05, zdepth=0.30, radius=0.1
These are values for the D11@ILL Dornier 'Dolores' Velocity Selector (

Input parameters

Parameters in **boldface** are required; the others are optional.

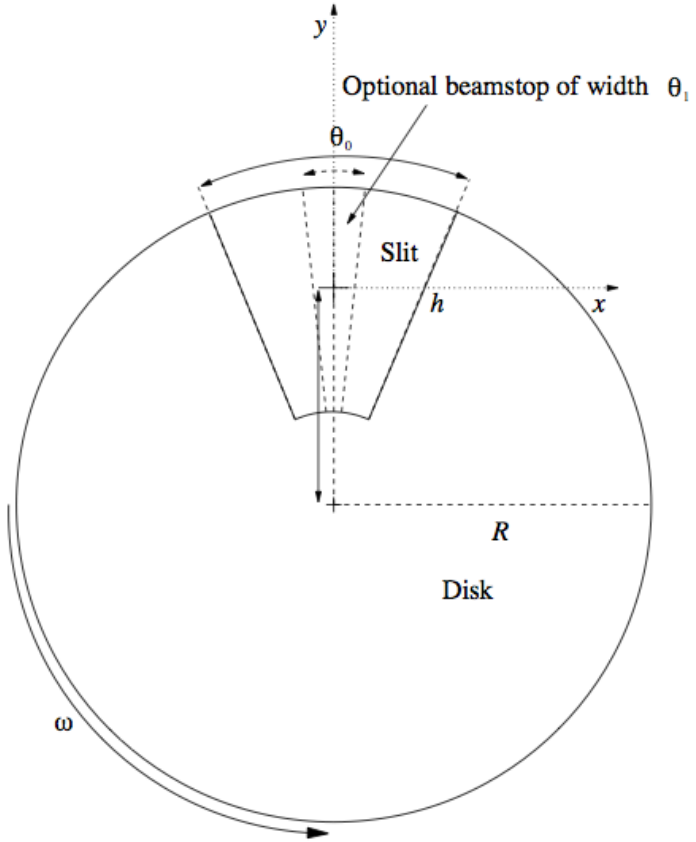
Name	Unit	Description	
xwidth	m	Width of entry aperture	
yheight	m	Height of entry aperture	
zdepth	m	Distance between apertures, for housing containing the rot	
radius	m	Height from aperture centre to rotation axis	
alpha	deg	Twist angle along the cylinder	
length	m	Length of cylinder/rotor (less than zdepth)	0.25
d	m	Thickness of blades	0.0004
nu	Hz	Cylinder rotation speed, counter-clockwise, which is ideally 3956*alpha*DEG2RAD/2/PI/lambda/length	300
nslit	1	Number of Soller blades	72

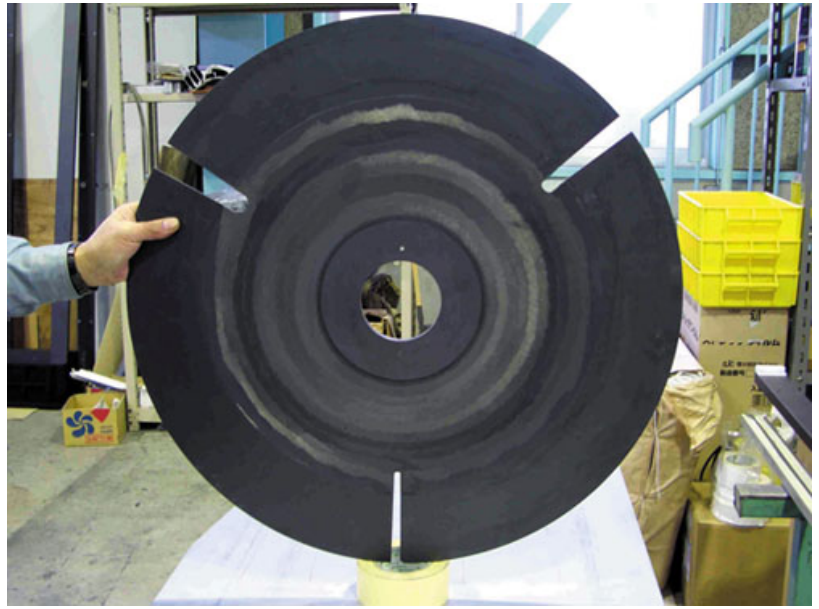
DISK CHOPPER

Define time structure of the beam

Time Of Flight (TOF) measurements

DISK CHOPPER





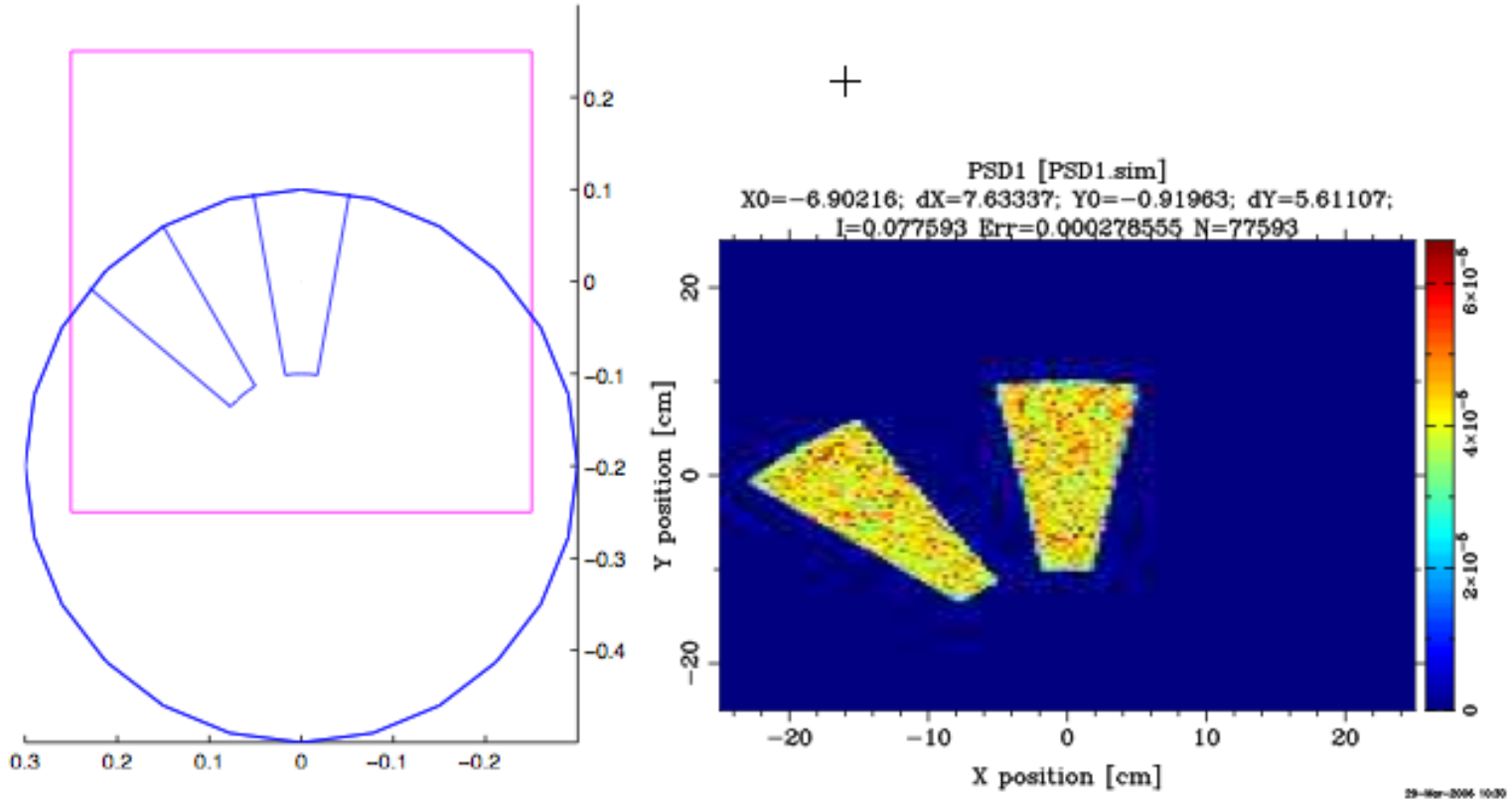
DISK CHOPPER

Input parameters

Parameters in **boldface** are required; the others are optional.

Name	Unit	Description	Default
theta_0	deg	Angular width of the slits.	0
radius	m	Radius of the disc	0.5
yheight	m	Slit height (if = 0, equal to radius). Auto centering of beam at half height.	
nu	Hz	Frequency of the Chopper, omega=2*PI*nu (algebraic sign defines the direction of rotation)	
nslit	1	Number of slits, regularly arranged around the disk	3
jitter	s	Jitter in the time phase	0
delay	s	Time 'delay'	0
isfirst	0/1	Set it to 1 for the first chopper position in a cw source (it then spreads the neutron time distribution)	0
n_pulse	1	Number of pulses (Only if isfirst)	1
abs_out	0/1	Absorb neutrons hitting outside of chopper radius?	1
phase	deg	Angular 'delay' (overrides delay)	0
xwidth	m	Horizontal slit width opening at beam center	0
verbose	1	Set to 1 to display Disk chopper configuration	0

DISK CHOPPER_S



FERMI CHOPPER