

# Triggering schemes for SuperCDMS



### SuperCDMS experiment

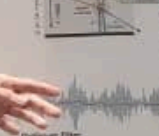
• Upgrade Dark Matter Search  
• Highly Operating Silicon Detectors  
• Reduces the background  
• High resolution  
• Low Noise, High Mass  
• High energy resolution

### SuperCDMS detectors

• 6000 detector  
• 10 x 10 x 10 cm  
• Operated at 800 K  
• 40 and 200  
• 1000 g  
• 1000 g  
• 1000 g  
• 1000 g

### Detection principle

SuperCDMS uses a Silicon Detectors (SD) to detect dark matter particles.



### Geometric Derivative Filter

• Filter out noise  
• Filter out background  
• Filter out dark matter



### Optimal Filter

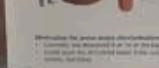
Optimized to search for dark matter particles.



• SuperCDMS uses a Silicon Detectors (SD) to detect dark matter particles.  
• The SD is made of Silicon (Si) and is operated at 800 K.  
• The SD is 10 x 10 x 10 cm and has a mass of 1000 g.  
• The SD is highly sensitive to dark matter particles and has a high energy resolution.

### SuperCDMS/CDMS online triggering

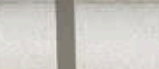
• Real-time data processing  
• High resolution  
• Low noise



• The SuperCDMS/CDMS online triggering system is designed to detect dark matter particles in real-time.  
• It consists of a detector, a trigger system, and a data acquisition system.  
• The trigger system is highly sensitive to dark matter particles and has a high energy resolution.

### SuperCDMS/CDMS offline triggering

• High resolution  
• Low noise



• The SuperCDMS/CDMS offline triggering system is designed to detect dark matter particles in real-time.  
• It consists of a detector, a trigger system, and a data acquisition system.  
• The trigger system is highly sensitive to dark matter particles and has a high energy resolution.