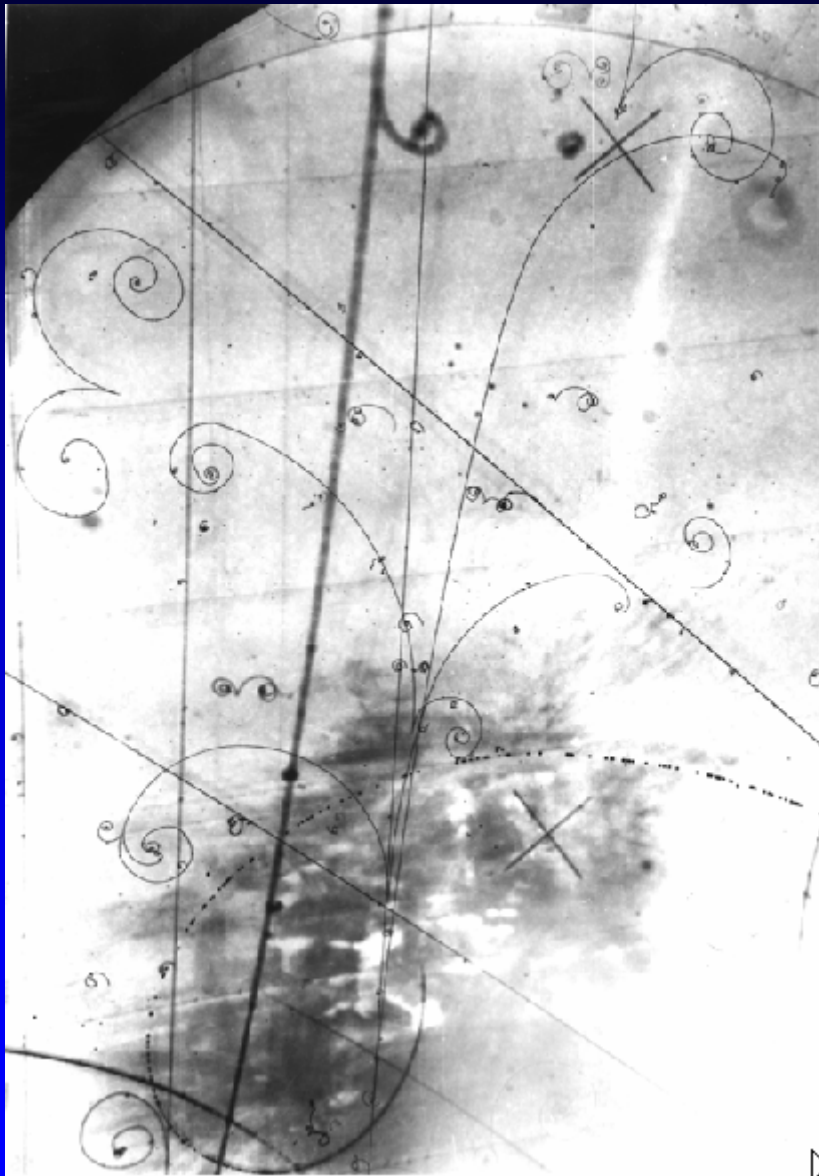


Cloud Chamber Workshop HST 2003

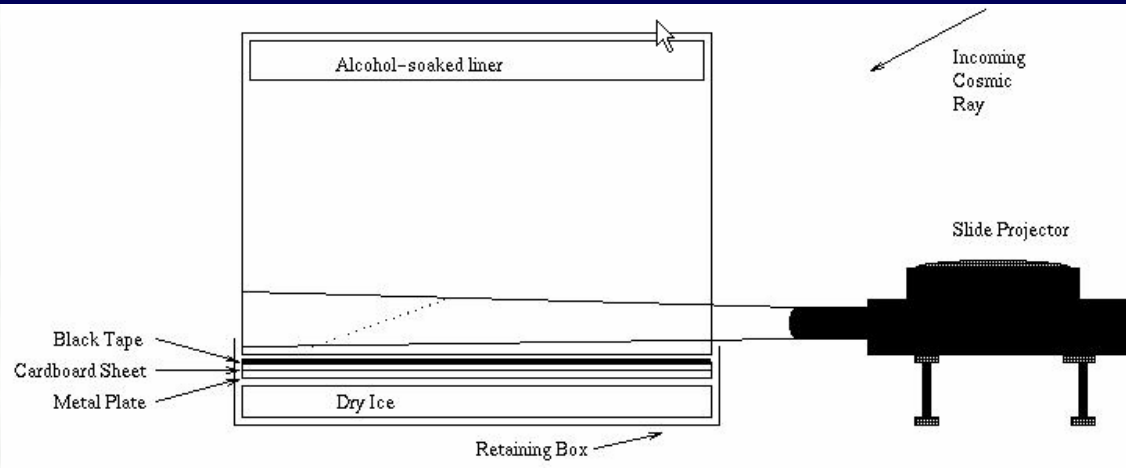
Silvia Schuh
CERN/EP

Bubble Chambers



- ◆ Liquid Hydrogen prepared and held under 5 atm pressure
- ◆ Just before beam arrives, reduce pressure to 2atm
- ◆ Passing particles will interact -> bubbles form
- ◆ Take picture
 - ❖ Triggering was the limiting factor!

Your own Cloud Chamber!



- ◆ Supersaturated alcohol vapor
 - ❖ Condenses on ions left by transversing charged particle

- ◆ Works through steep vertical temperature gradient (dry ice!)

- ❖ Alcohol evaporates from warm top side and diffuses towards cold bottom (gravitation!)

- ❖ A layer of supersaturation is created near chamber bottom

- ❖ Make fine threadlike tracks of cosmic rays visible ☺



Organisation

- ◆ 6-8 people per workshop
 - ❖ 3 workshops planned, will depend on # of people interested if all are held
 - ❖ Tuesday 14h - 17h
 - ❖ Wednesday 9h - 12h
 - ❖ Thursday 14h - 17h
 - ❖ People: Joachim Flammer & Francisco Barradas Solas (Paco) & Silvia Schuh
- ◆ Groups of 2 people build a cloud chamber together (~1.5 hours)
- ◆ Discussion of cosmic rays and what's actually seen (~30 minutes)
- ◆ Open discussion on how to possibly use this tool in classrooms (~60 minutes)
 - ❖ Materials, use of magnets, taking pictures etc.
 - ❖ Input from people who have used cloud chambers in various settings (Paco who was at HST 2001!)