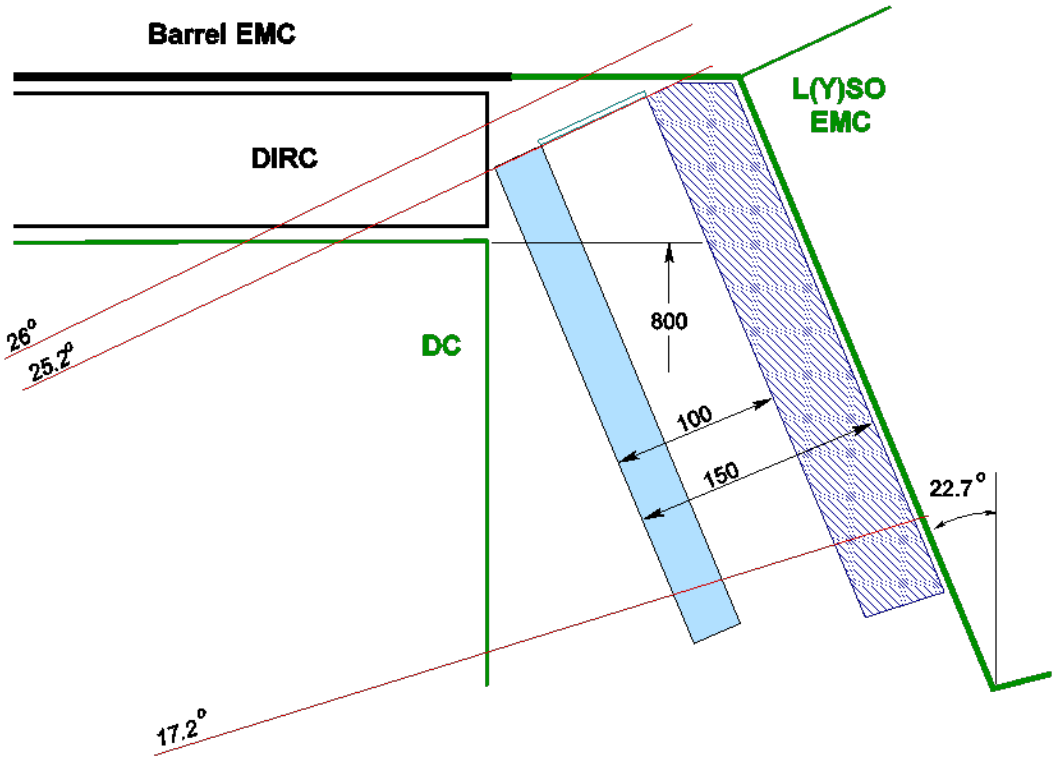
FARICH with 100 mm expansion gap

Evgeniy Kravchenko,

Budker INP, Novosibirsk, Russia

Main aspects of the design

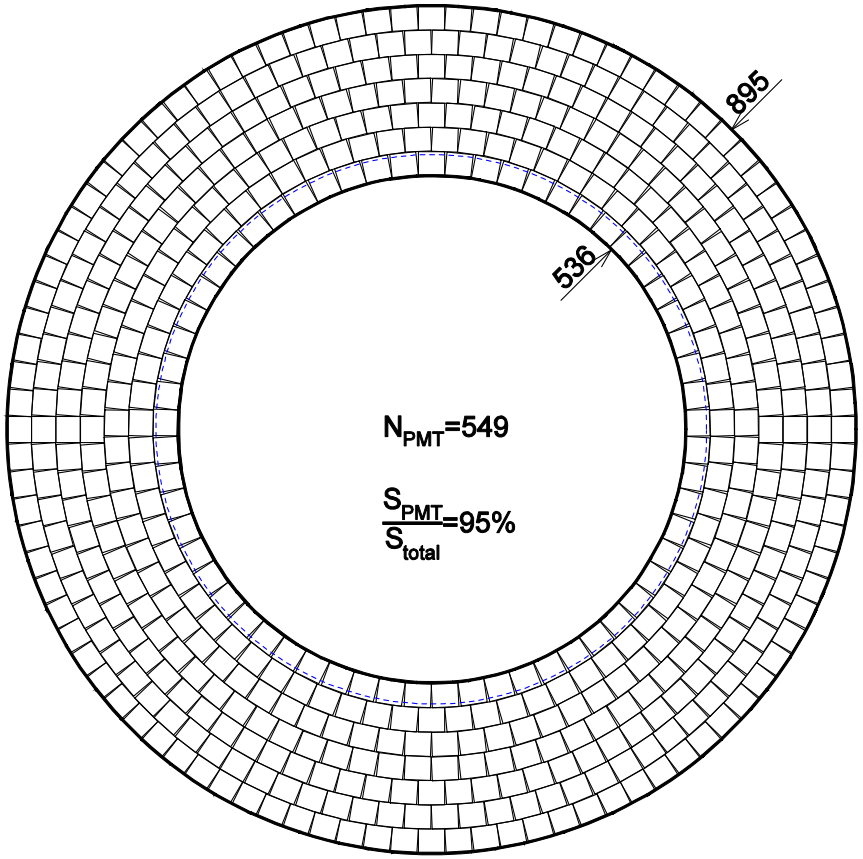


- With LSO the front of the endcap calorimeter could be moved back for about 12 cm
- Full scale Drift Chamber
- There is a space for 15 cm thick FARICH

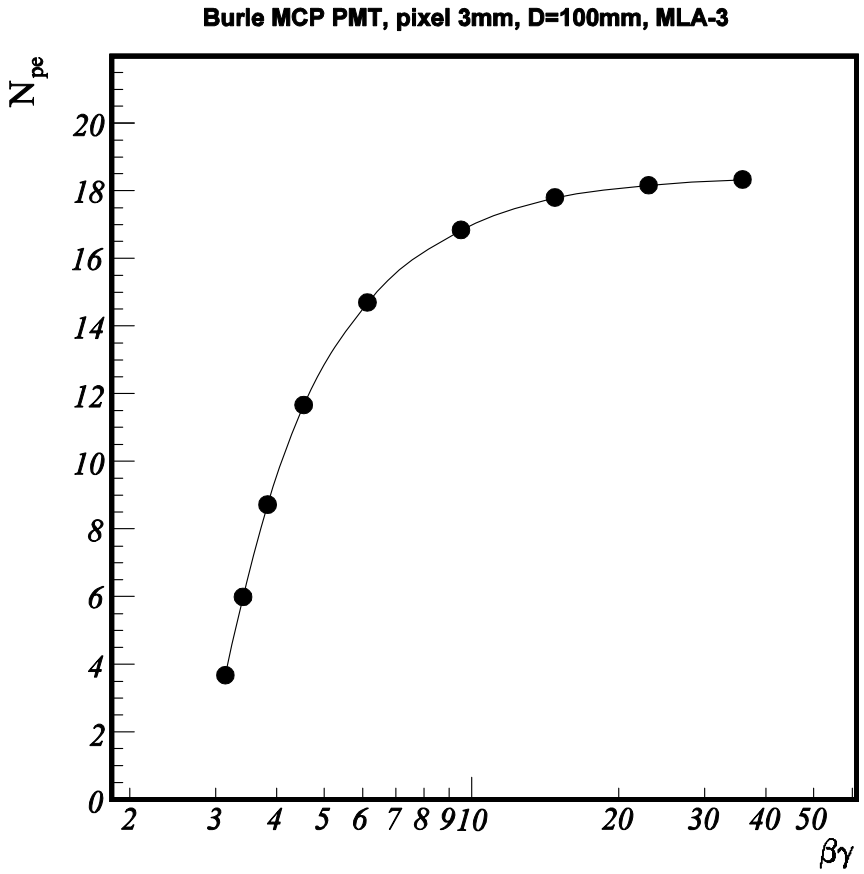
Monte Carlo input data

- Distance radiator - photodetector **100 mm**
- Burle MCP PMT with **3 mm pixels** (16×16 matrix), photoelectron collection efficiency 70%,
- geometrical factor 85%
- 3-layer aerogel, n_{max}=1.07, total thickness 30 mm
- Number of PMTs - **550**
- Number of channels -**140000**

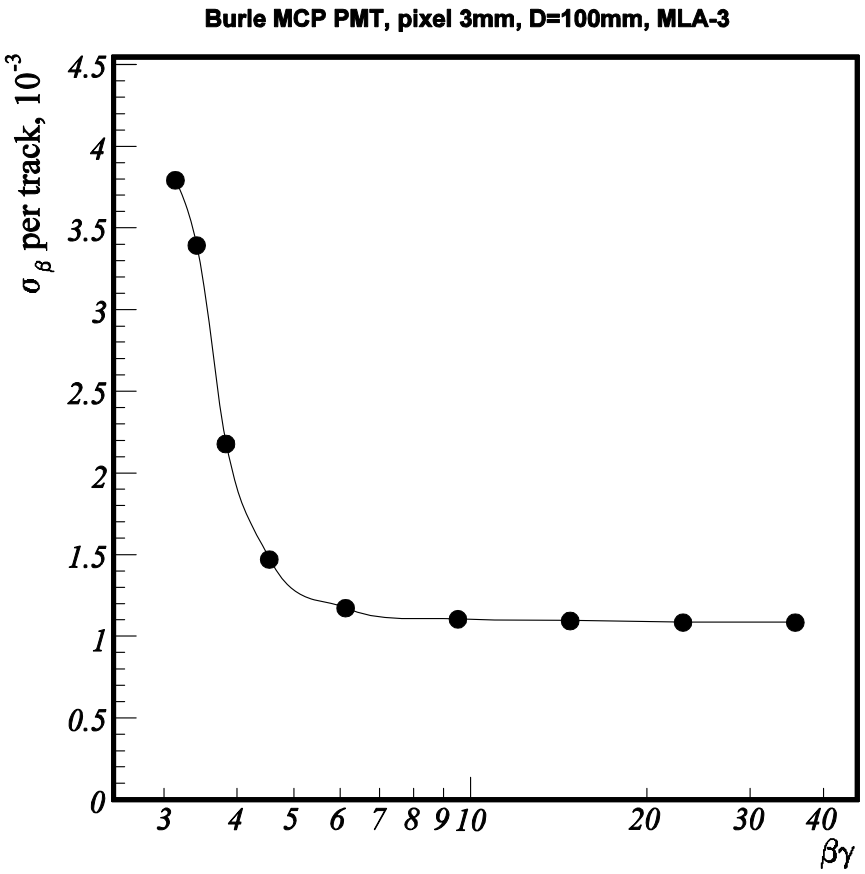
PMTs layout



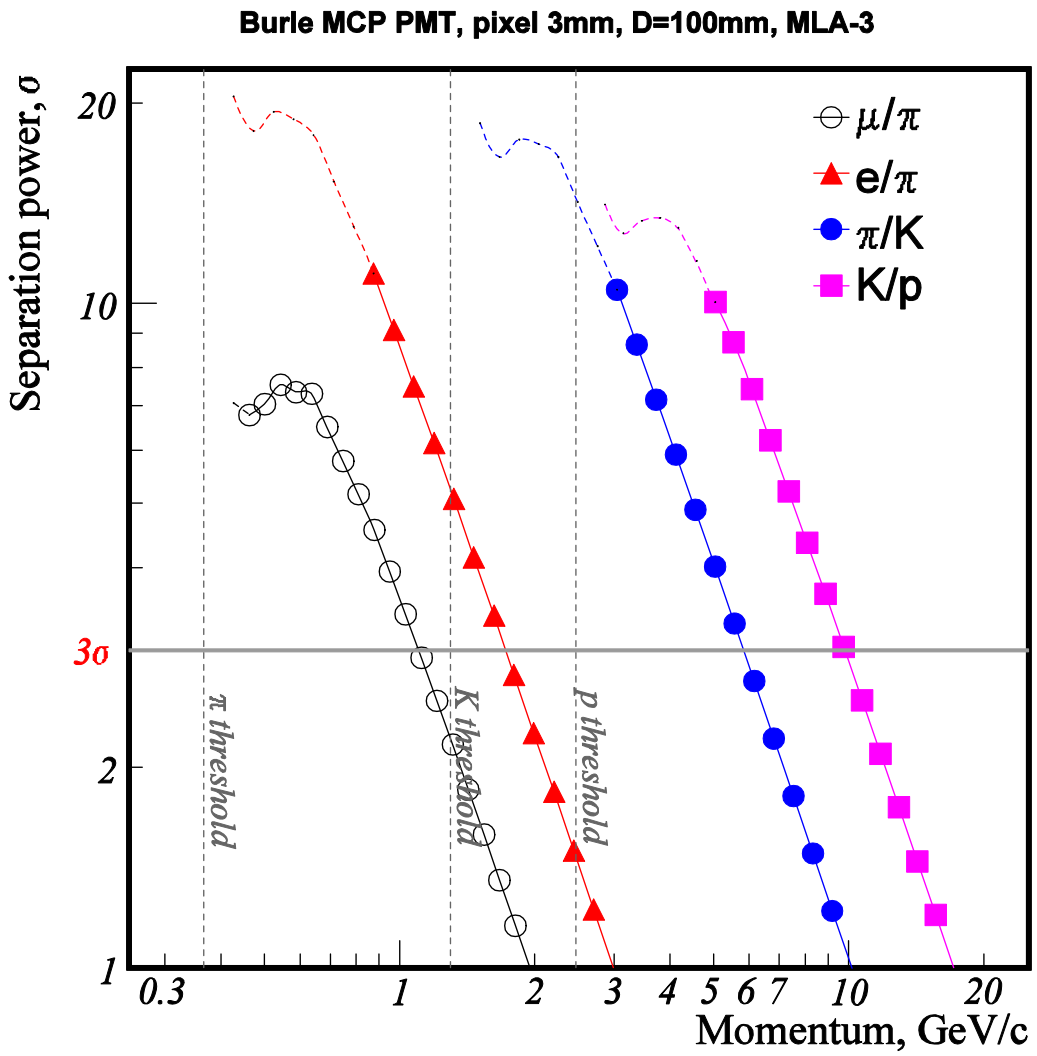
Number of photoelectrons



Velocity resolution



Particle separation



Amount of material

	thickness, mm	X_0, %
Aerogel, n=1.07	30	3.5
Free space	70	0
MCP PMT	20	~14
Electronics, cables, support, other…	30	~10
Total	150	**~25-30**