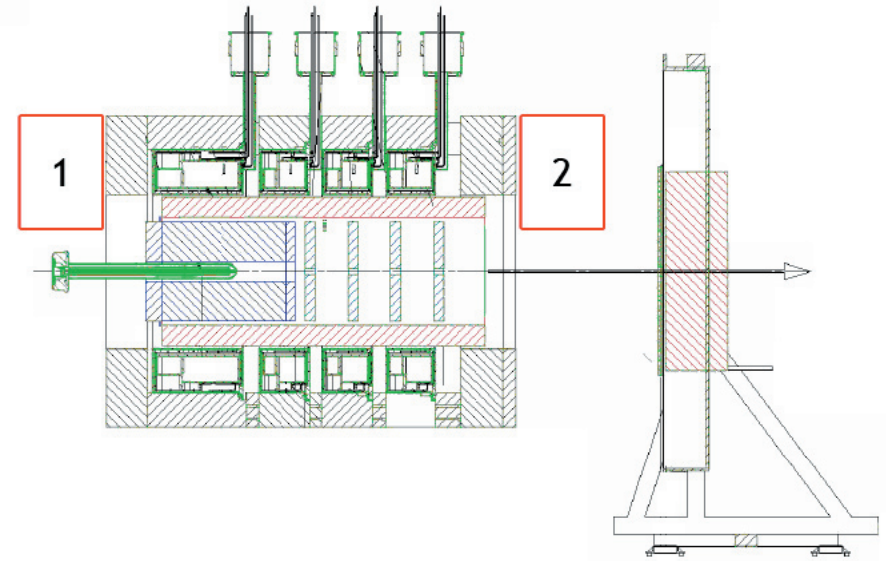


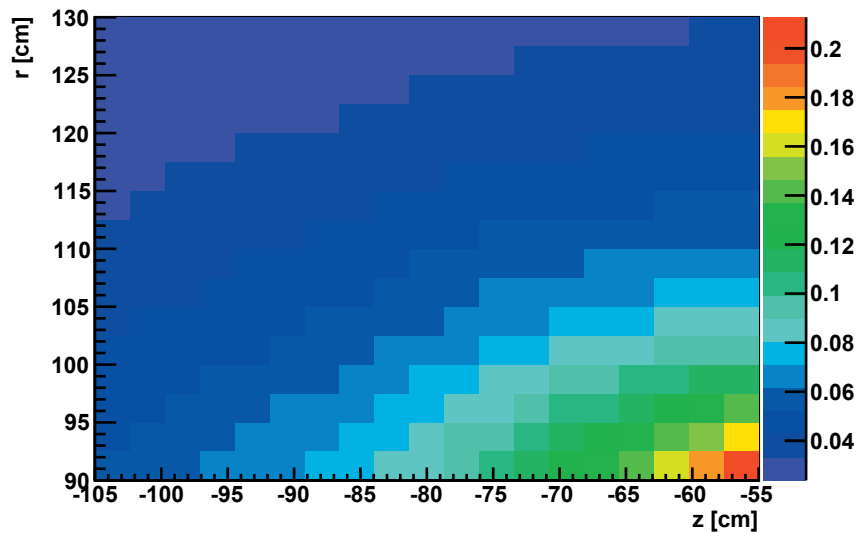
# Determination of Location and Orientation of Fine Mesh PhotoMultiplier Tubes relative to Magnetic Field at Gluex Experiment

Pedro F. Toledo  
Silicon Laboratory  
Universidad Técnica Federico Santa Mar´ıa  
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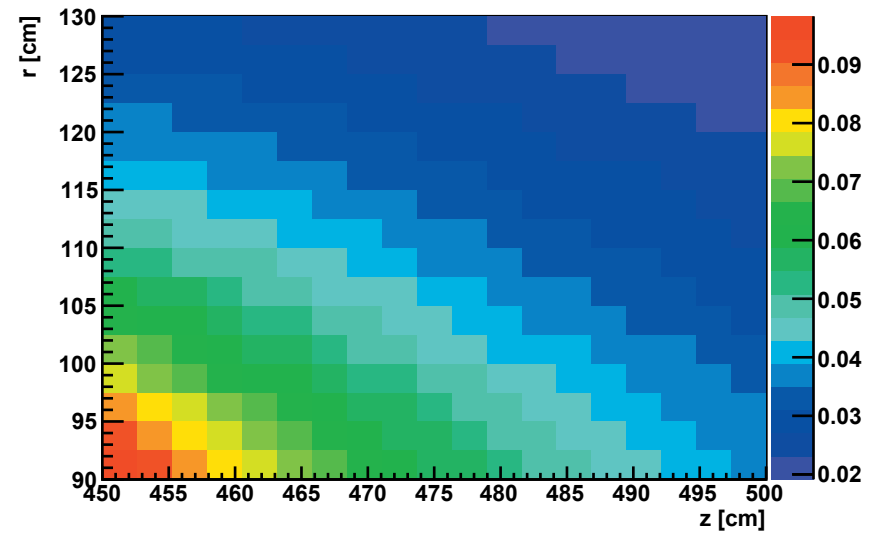
Available Space for FMPMT  
Disposition and his Magnetic Field Magnitude  
(From the file “bfield\_1500\_20081209-1.root”)



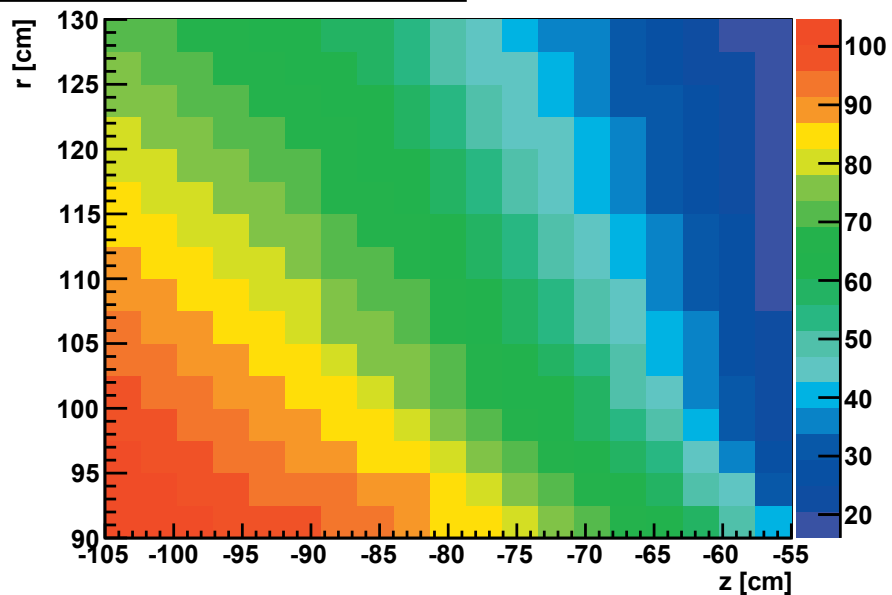
Left Zone Field Magnitude (Tesla)\_pxy



Right Zone Field Magnitude (Tesla)\_pxy

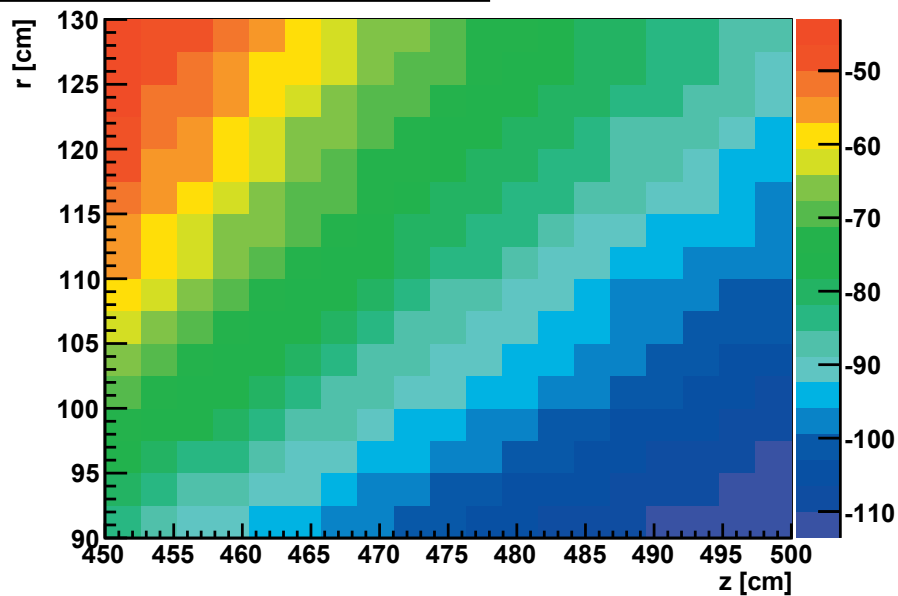


Left Zone Field Angle (deg)\_pxy



Very Symmetrical  
Magnetic Field Angle Map

Right Zone Field Angle (deg)\_pxy

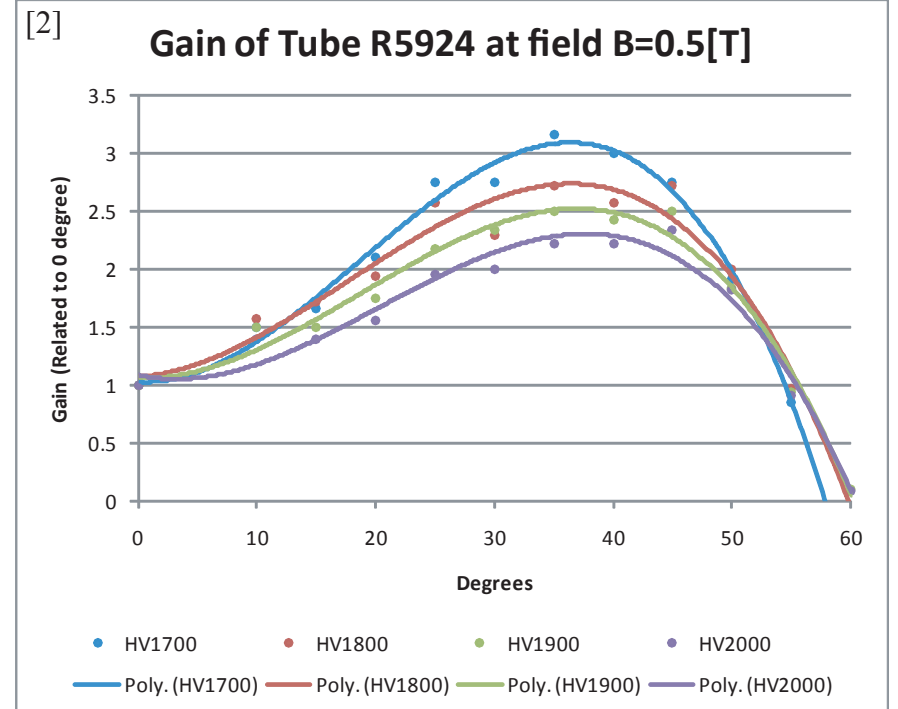
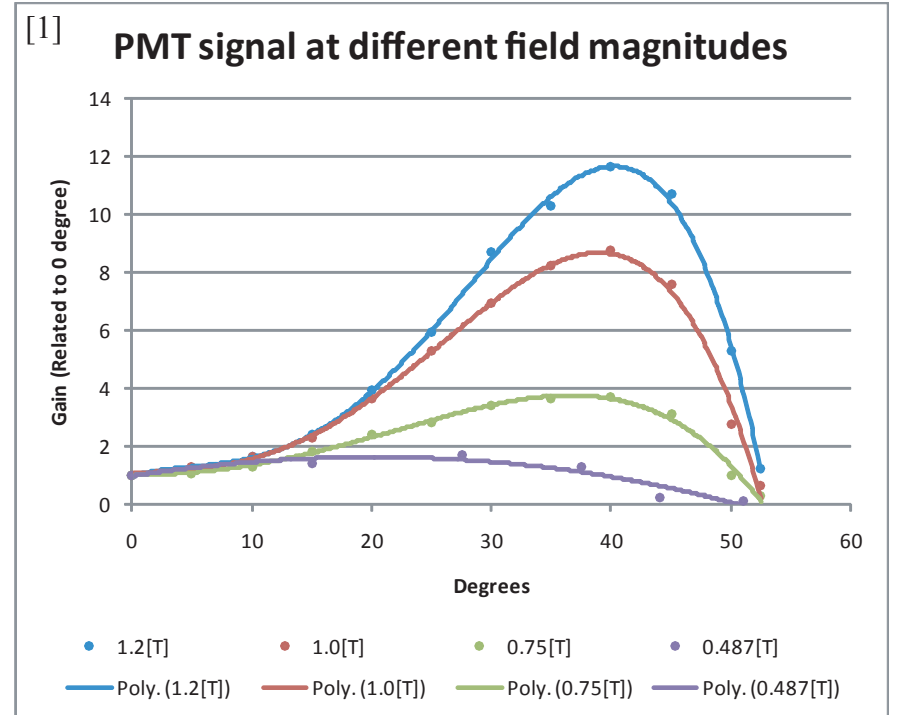


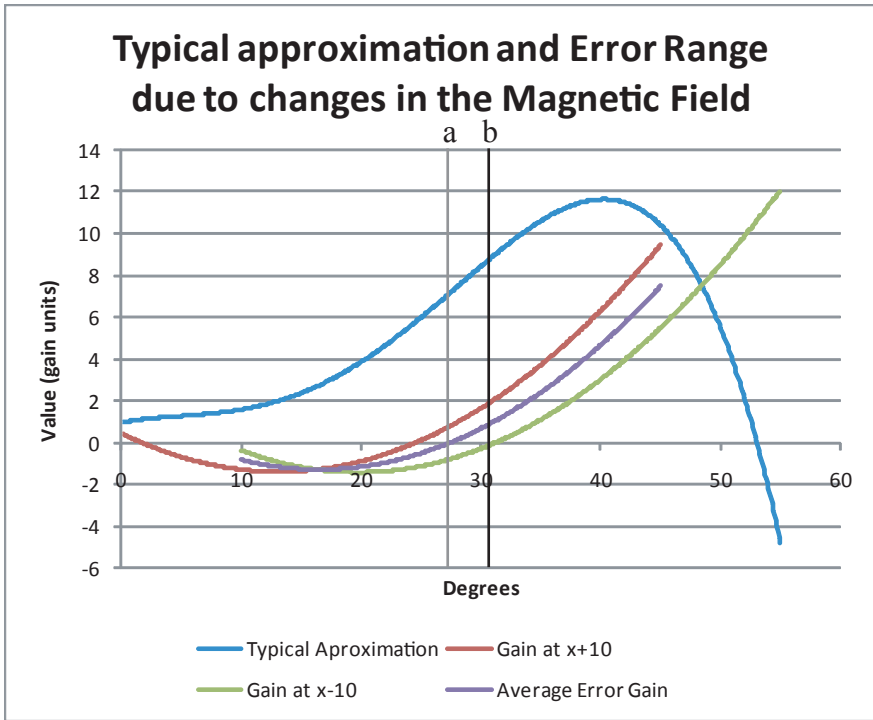
## Why is the Magnetic Field Angle Map so Important

Is important to mention that the works about the FMPMT cited are incomplete for the actual analysis of disposition, because the experiments just considers a back to front magnetic field and this field just change in angle between 0 and 60[deg]. Since there is not more information, this work will assume that the FMPMT behavior will be the same for a back to front or a front to back magnetic field, that the behavior for a -60 to 0[deg] incident field will be the same as one for 0 to 60[deg] and that the FMPMT rotation does not affect the detection.

[1] W. U. Boeglin, GlueX-doc-1173 A Study of the Fine Mesh Photomultiplier Tube Assemblies H6152-01 and H6614-01. Physics Department, Florida International University November 25, 2008

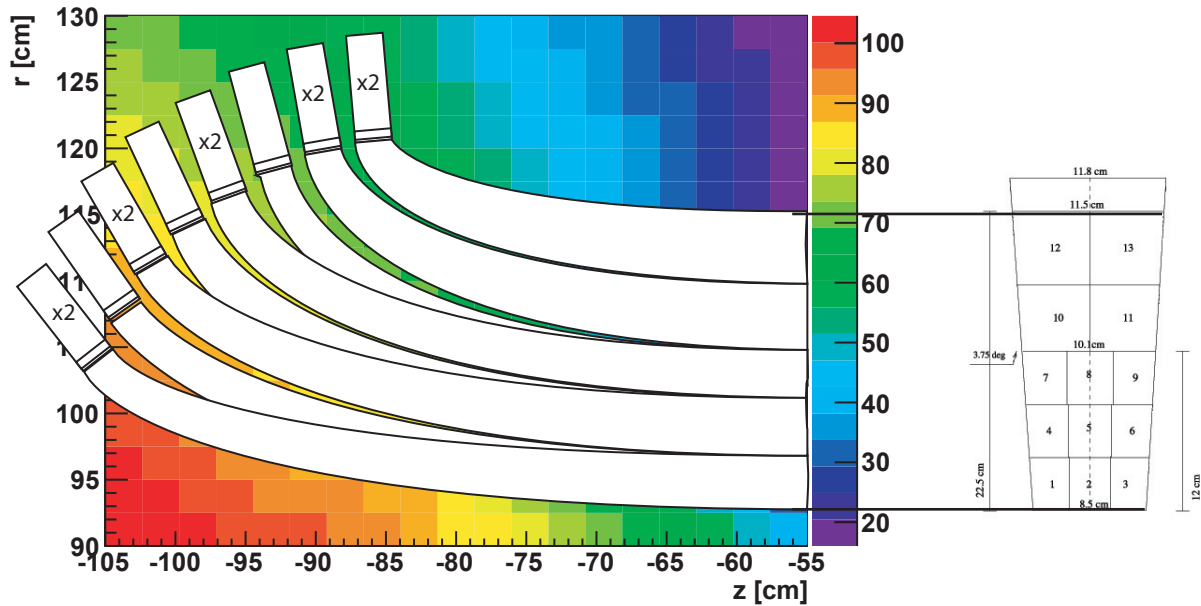
[2] P.Ioannou, C.Kourkoumelis, G.Voulgaris GlueX-doc-712 Test of the Hamamatsu Fine Mesh Phototubes University of Athens December 1, 2006



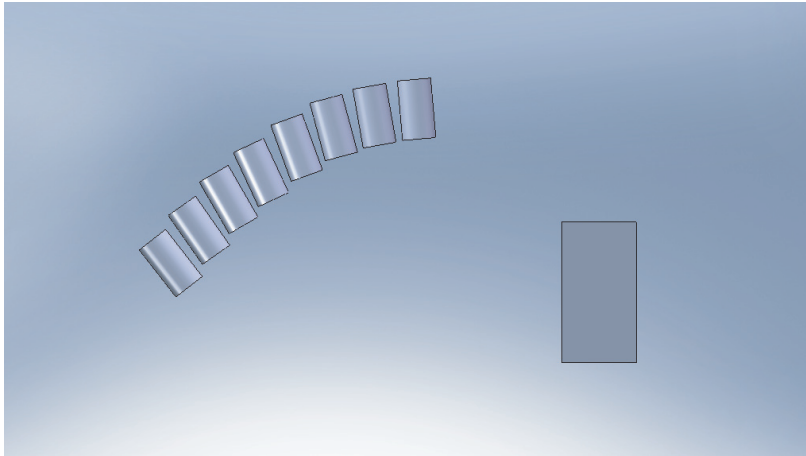


Angle Selection  
Optimum 27.4[deg]  
Selected 30[deg]

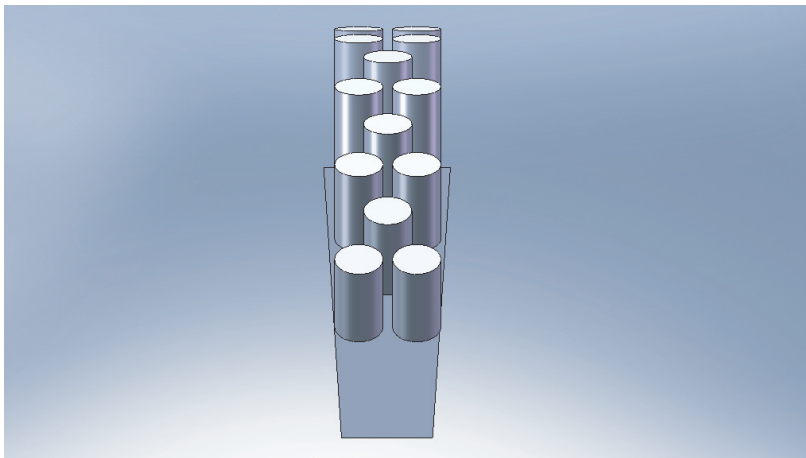
**FMPMT at sugested position**



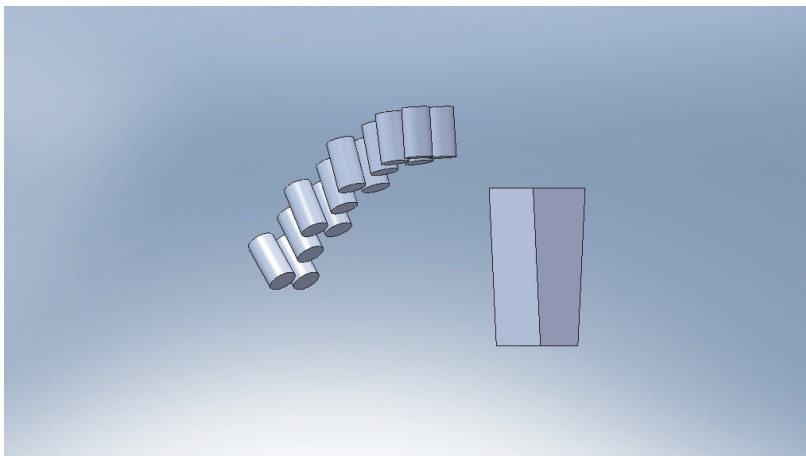
FMPMT  
Disposition



Front View



Lateral View



Perspective View

## To Do:

- More detailed FMPMT sensibility to the magnetic field (all angles and field senses with not homogeneous field)
- Optimization of Light Guides
- FMPMT support structure