## Activation Function

Node $=30$, LeakyRelu(0.01)


## LeakyRelu(0.01), Predicted Hit Probability



## LeakyRelu(0.01), Predicted Charge



## LeakyRelu(0.01), Expected mean charge (Predicted

 Charge X Predicted Hit Probability)
$\gamma \mathrm{E}=500.0 \mathrm{MeV} \phi=2.21$


## LeakyRelu(0.01), Predicted Variance of Charge



## Comparison with FC1 30 Node, Train



## Comparison with FC1 30 Node, Test



Node $=50 \mathrm{~N}$, LeakyRelu(0.1)


## LeakyRelu(0.1), Predicted Hit Probability



## LeakyRelu(0.1), Predicted Charge



## LeakyRelu(0.1), Expected mean charge (Predicted Charge X Predicted Hit Probability)


$\gamma E=700.0 \mathrm{MeV} \phi=2.94$


## LeakyRelu(0.1), Predicted Variance of Charge



## Comparison with FC1 50 Node, Train



## Comparison with FC1 50 Node, Test



## Node $=50 \mathrm{~N}$, LeakyRelu(0.5)



## LeakyRelu(0.5), Predicted Hit Probability



## LeakyRelu(0.5), Predicted Charge






## LeakyRelu(0.5), Expected mean charge (Predicted Charge X Predicted Hit Probability)







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## LeakyRelu(0.5), Predicted Variance of Charge



## Comparison with FC1 50 Node, Train



## Comparison with FC1 50 Node, Test



Node $=50$, LeakyRelu(0.02)


## LeakyRelu(0.02), Predicted Hit Probability



## LeakyRelu(0.02), Predicted Charge



LeakyRelu(0.02), Expected mean charge (Predicted Charge X Predicted Hit Probability)


## LeakyRelu(0.02), Predicted Variance of Charge

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Node $=50$, LeakyRelu(0.03)


## LeakyRelu(0.03), Predicted Hit Probability



## LeakyRelu(0.03), Predicted Charge



LeakyRelu(0.03), Expected mean charge (Predicted Charge X Predicted Hit Probability)


## LeakyRelu(0.03), Predicted Variance of Charge










Node $=50$, LeakyRelu(-0.01)


## LeakyRelu(-0.01), Predicted Hit Probability



LeakyRelu(-0.01), Predicted Charge


LeakyRelu(-0.01), Expected mean charge (Predicted Charge X Predicted Hit Probability)


## LeakyRelu(-0.01), Predicted Variance of Charge



## Node $=50$, LeakyRelu(0.01), NoBatchNorm1D



## LeakyRelu(0.01), Predicted Hit Probability,NoBatchNorm1d



## LeakyRelu(0.01), Predicted Charge, NoBatchNorm1D



LeakyRelu(0.01), Expected mean charge (Predicted Charge X Predicted Hit Probability), NoBatchNorm1D




## LeakyRelu(0.01), Predicted Variance of Charge,NoBatchNorm1D



## Withour BatchNorm1D



## With BatchNorm1d



