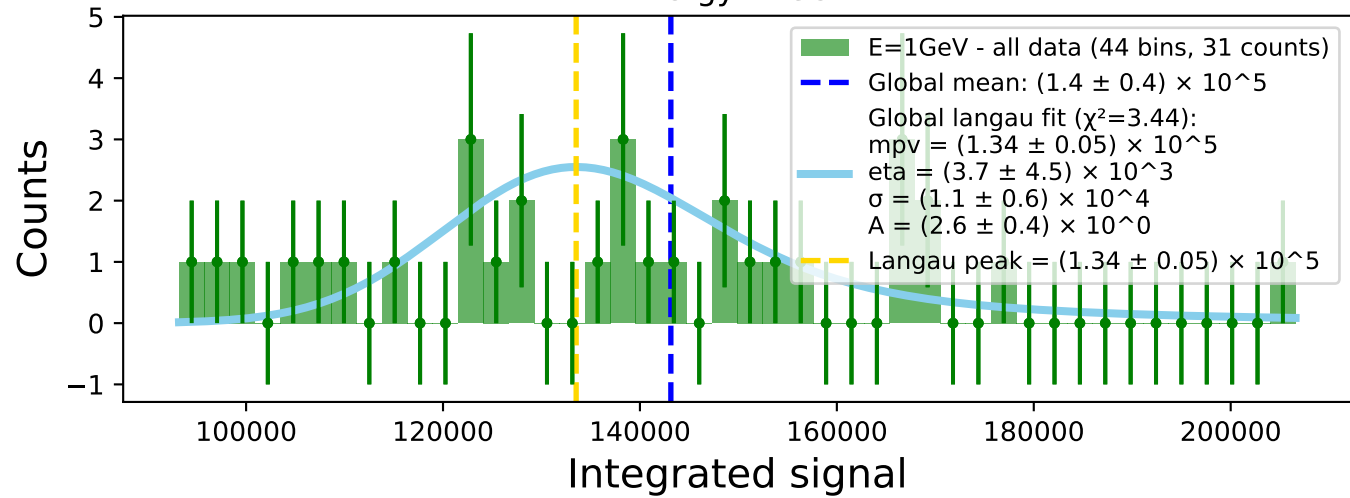


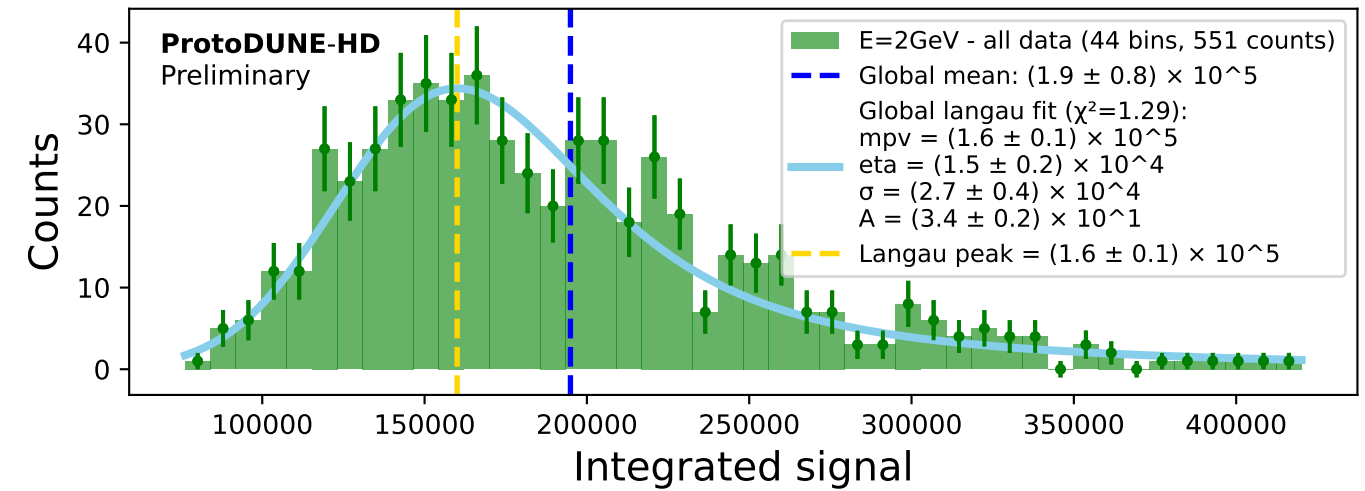
# Endpoint 109 - Channel 0 : Integral Before Analysis - 44 bins

**ProtoDUNE-HD**  
Preliminary

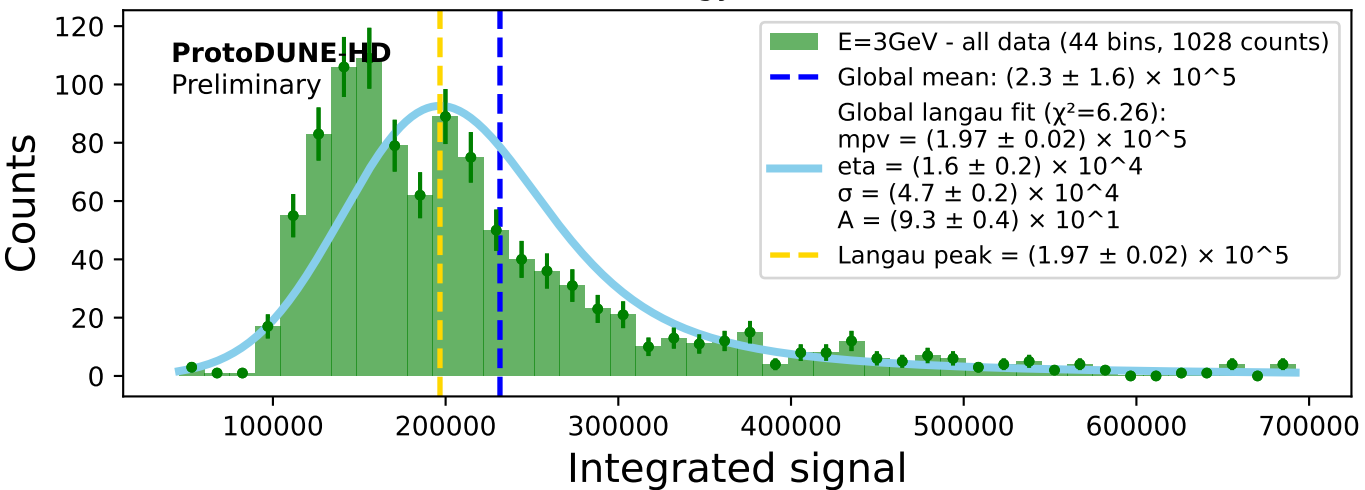
Energy: 1 GeV



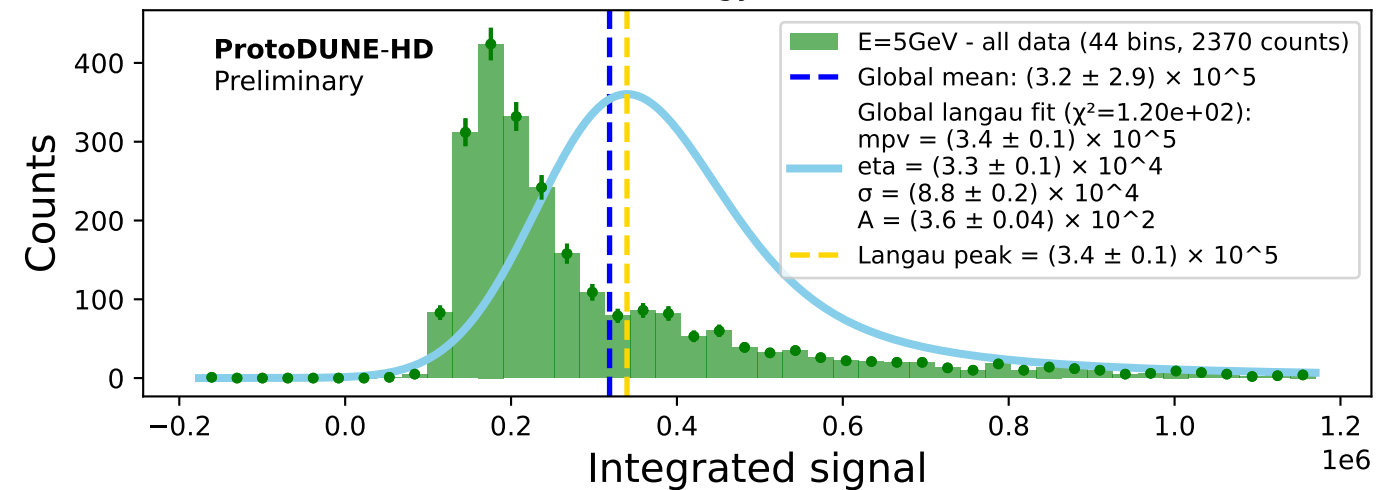
Energy: 2 GeV



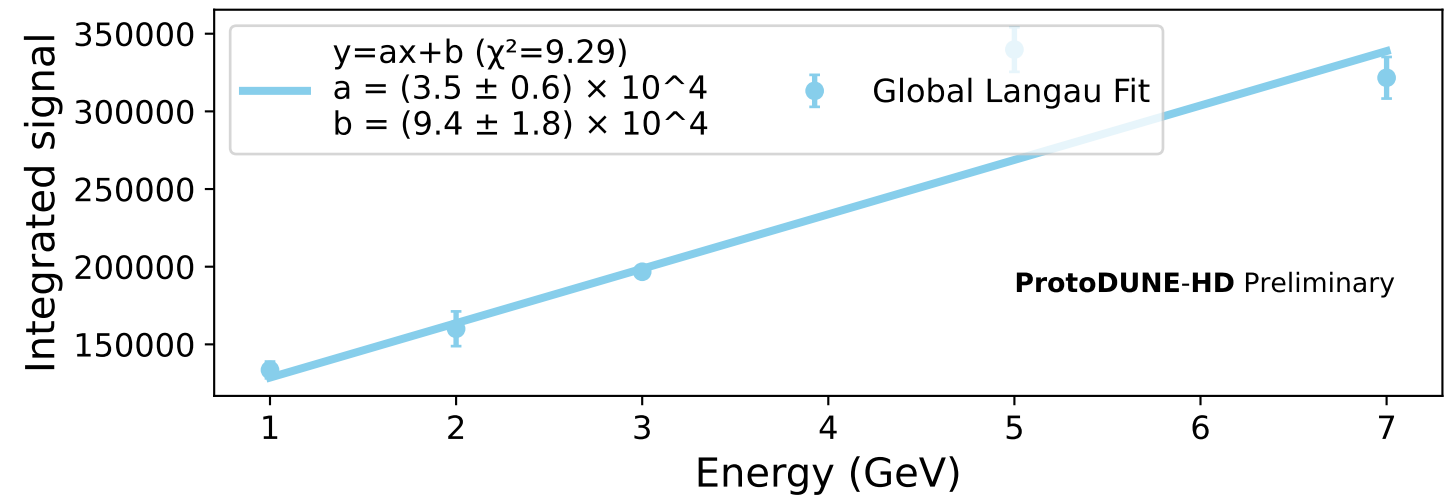
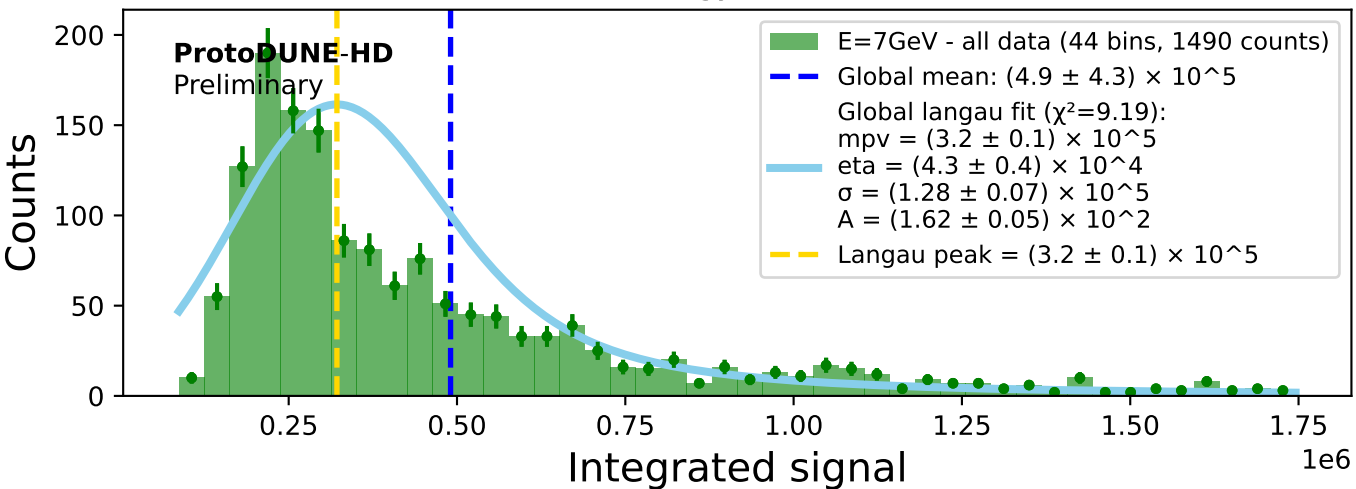
Energy: 3 GeV



Energy: 5 GeV

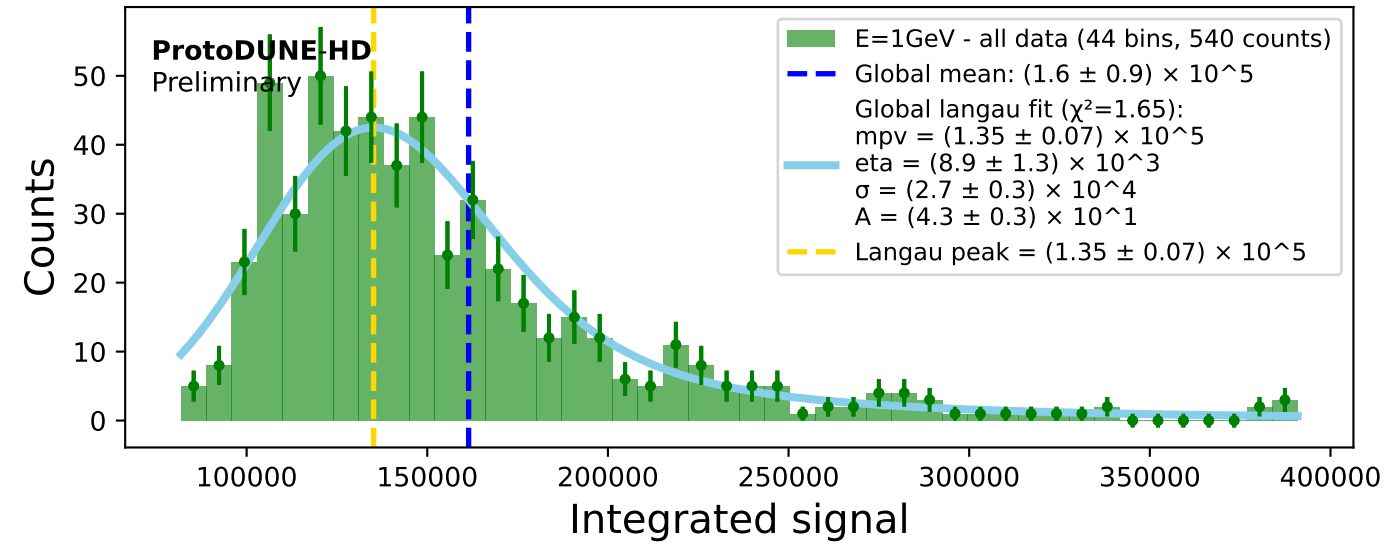


Energy: 7 GeV

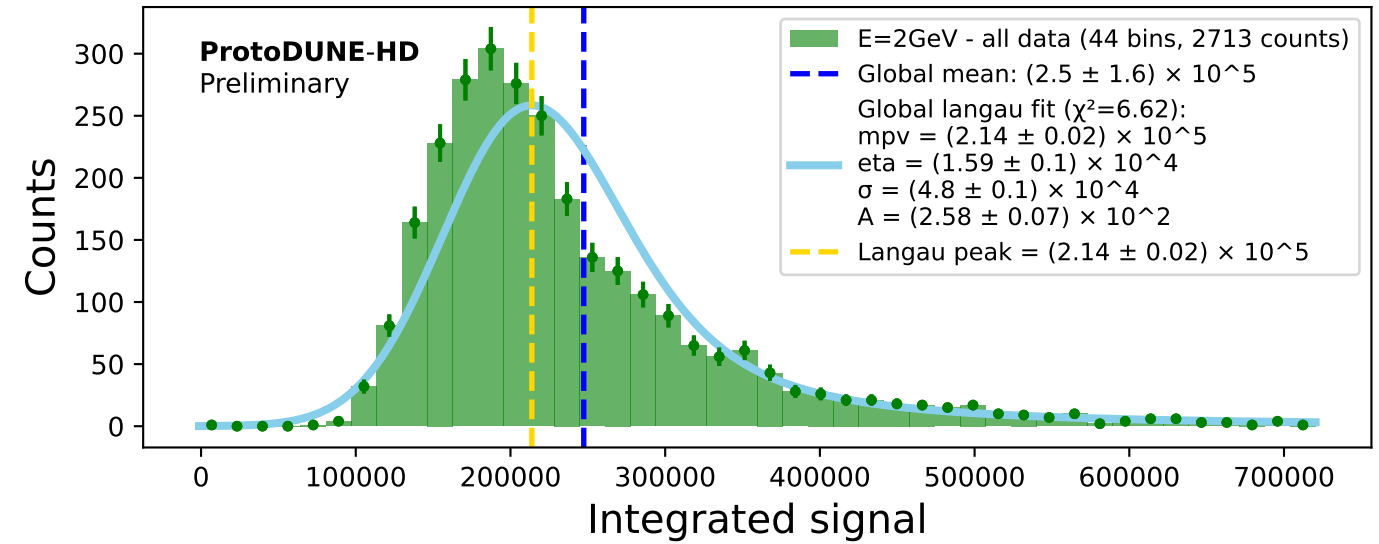


# Endpoint 109 - Channel 1 : Integral Before Analysis - 44 bins

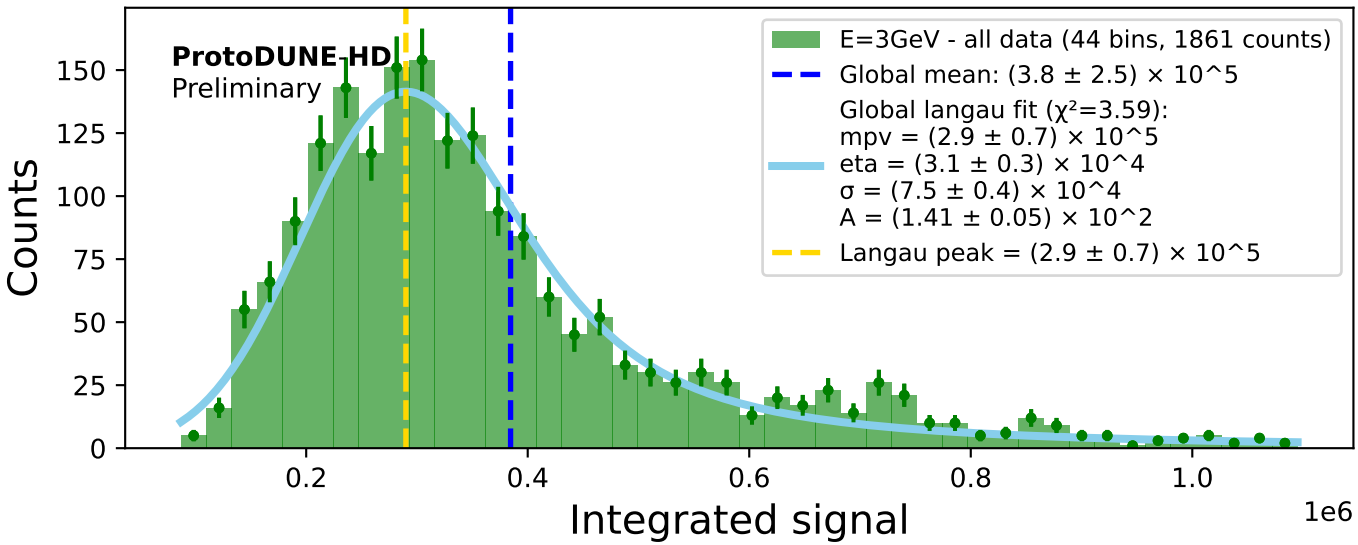
Energy: 1 GeV



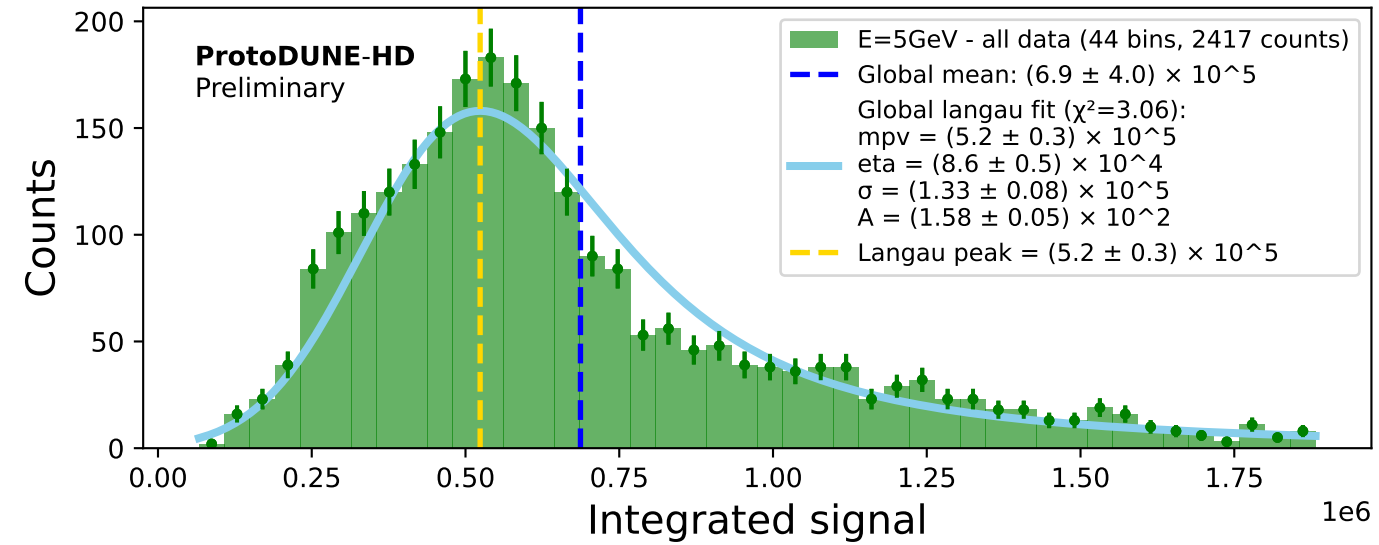
Energy: 2 GeV



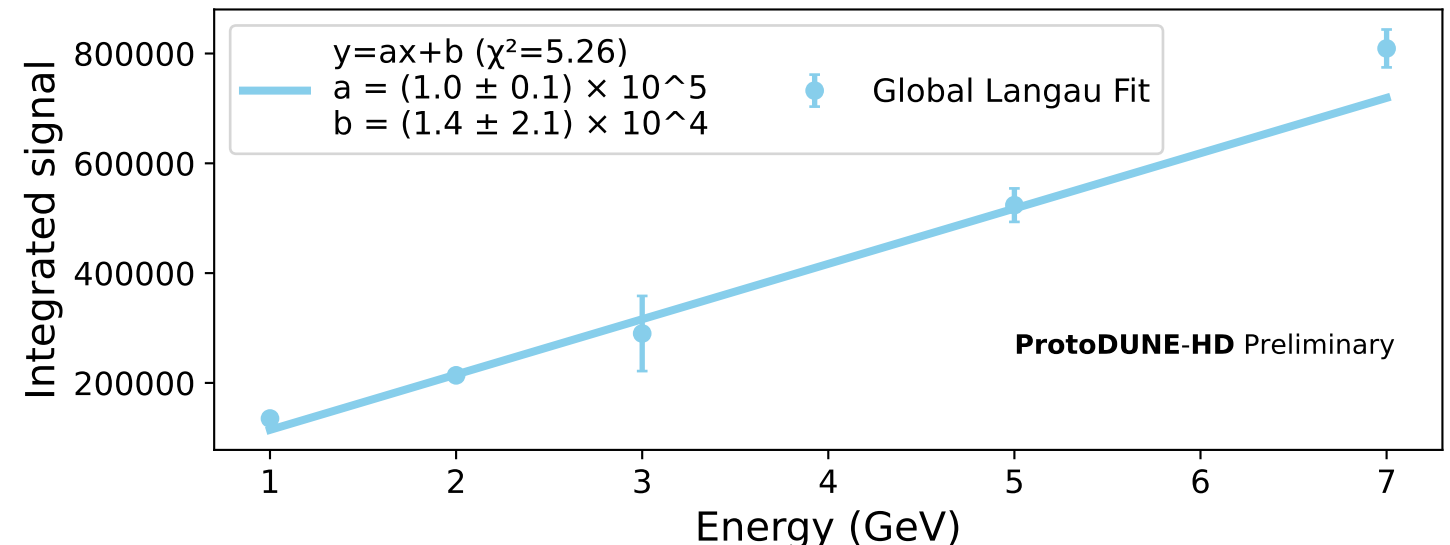
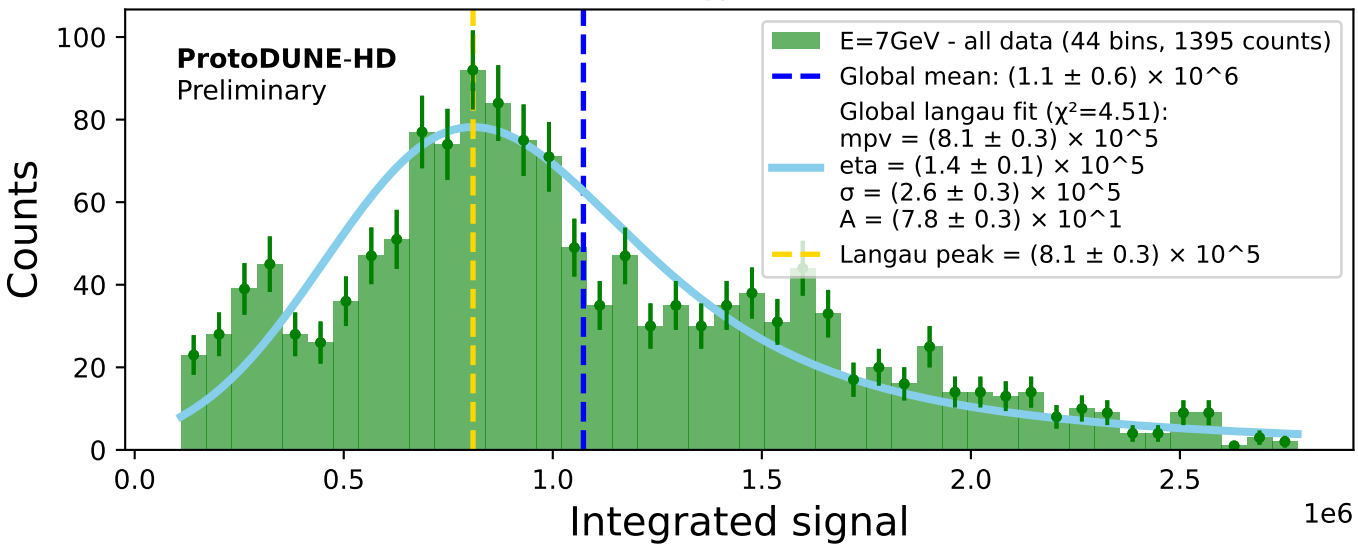
Energy: 3 GeV



Energy: 5 GeV



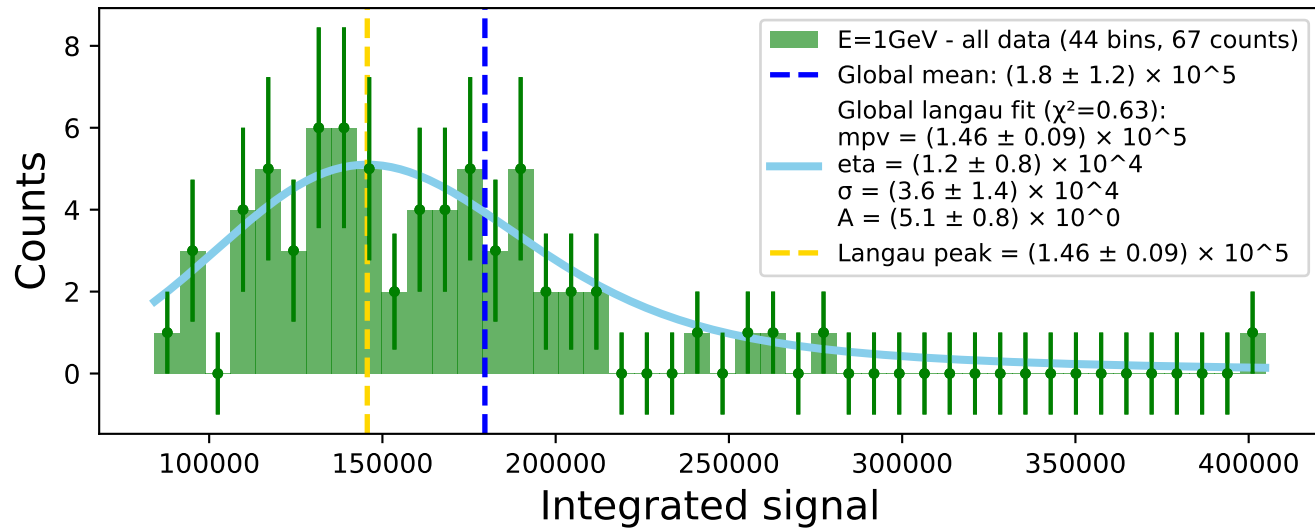
Energy: 7 GeV



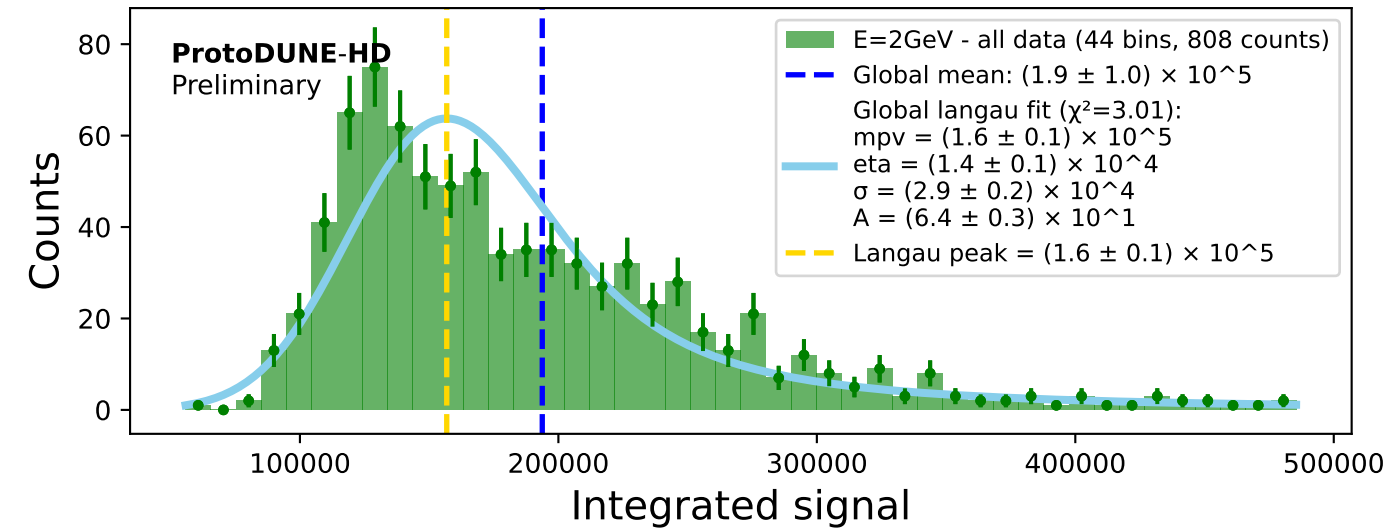
# Endpoint 109 - Channel 2 : Integral Before Analysis - 44 bins

**ProtoDUNE-HD**  
Preliminary

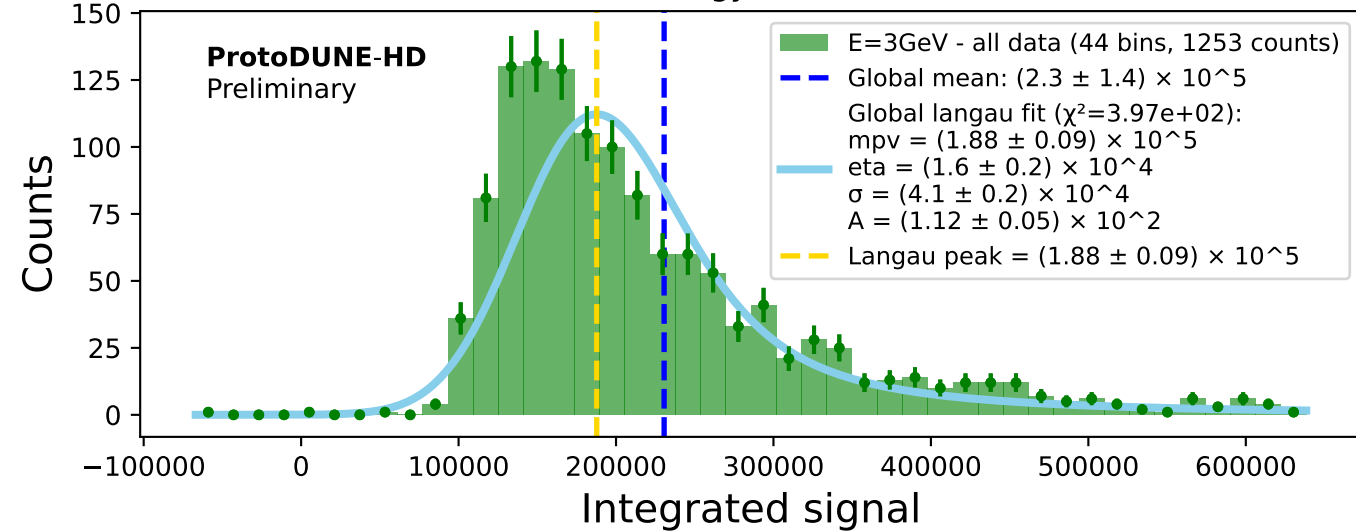
Energy: 1 GeV



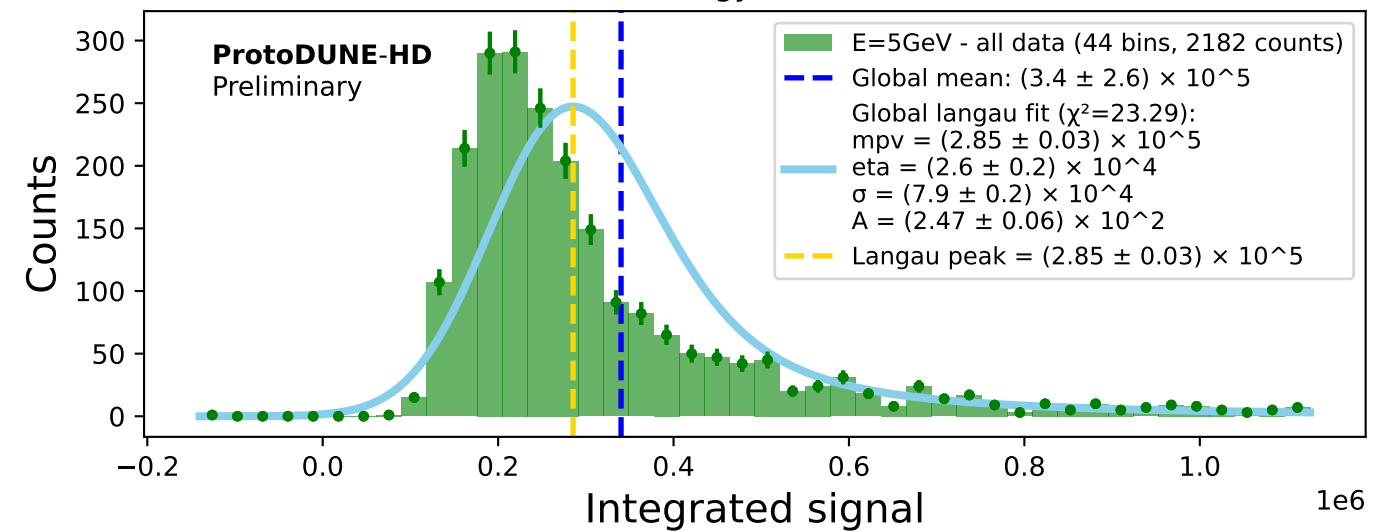
Energy: 2 GeV



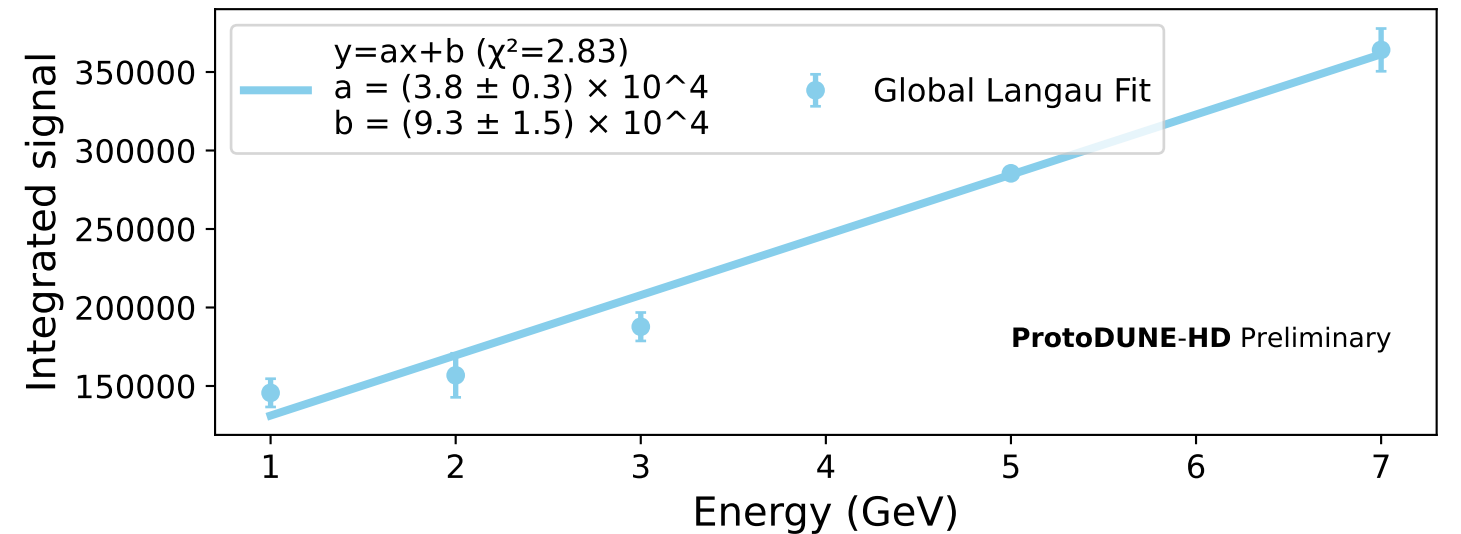
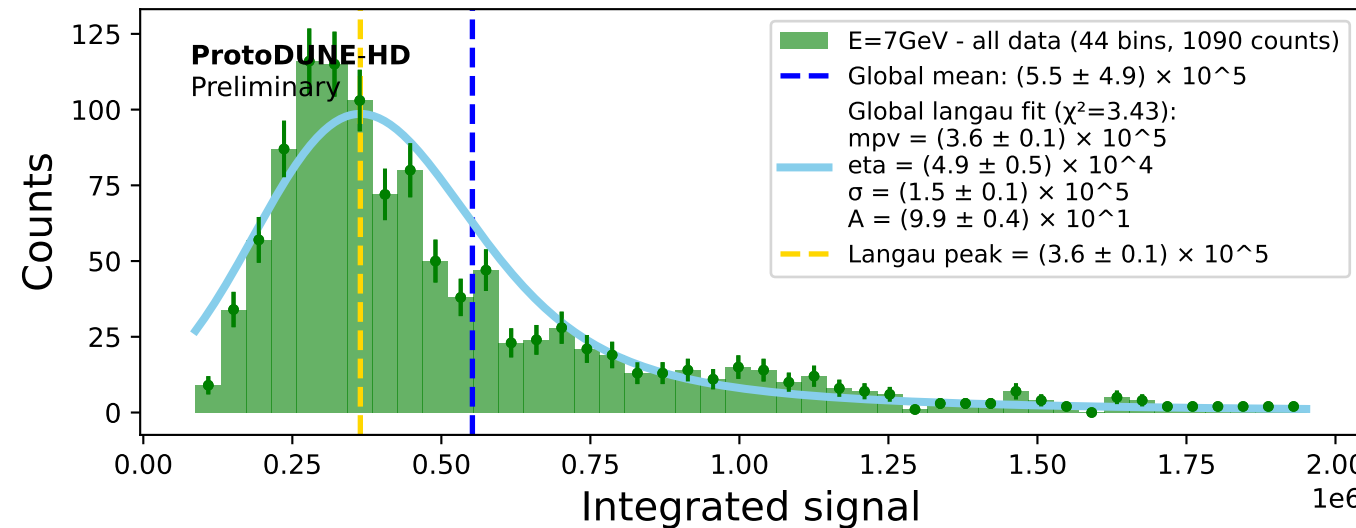
Energy: 3 GeV



Energy: 5 GeV

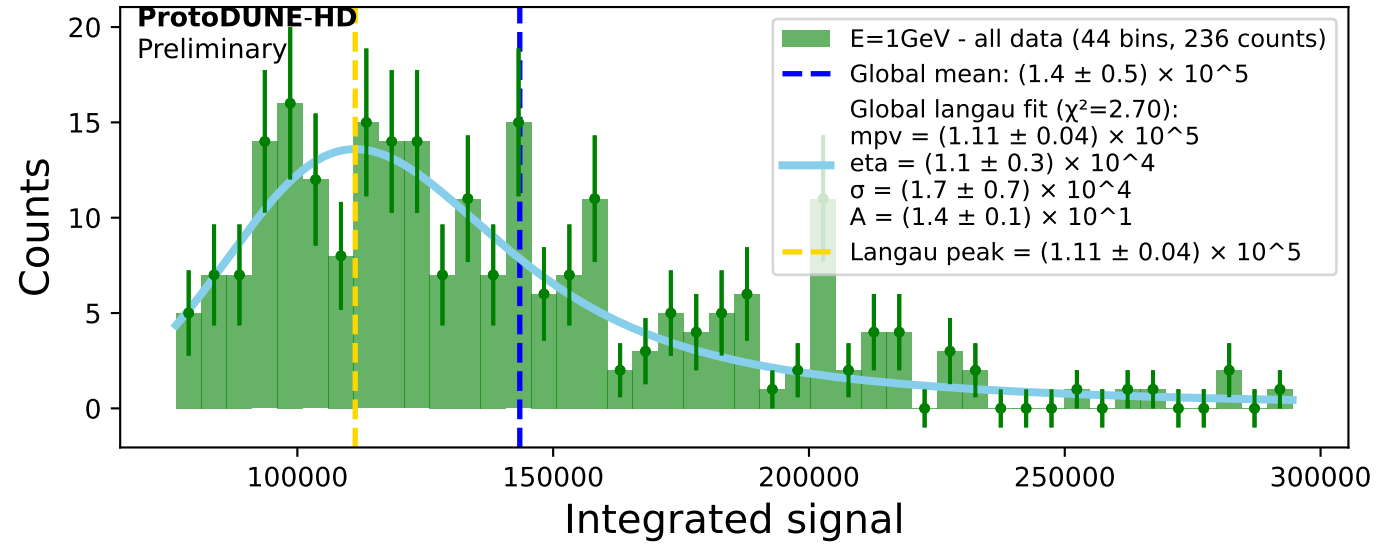


Energy: 7 GeV

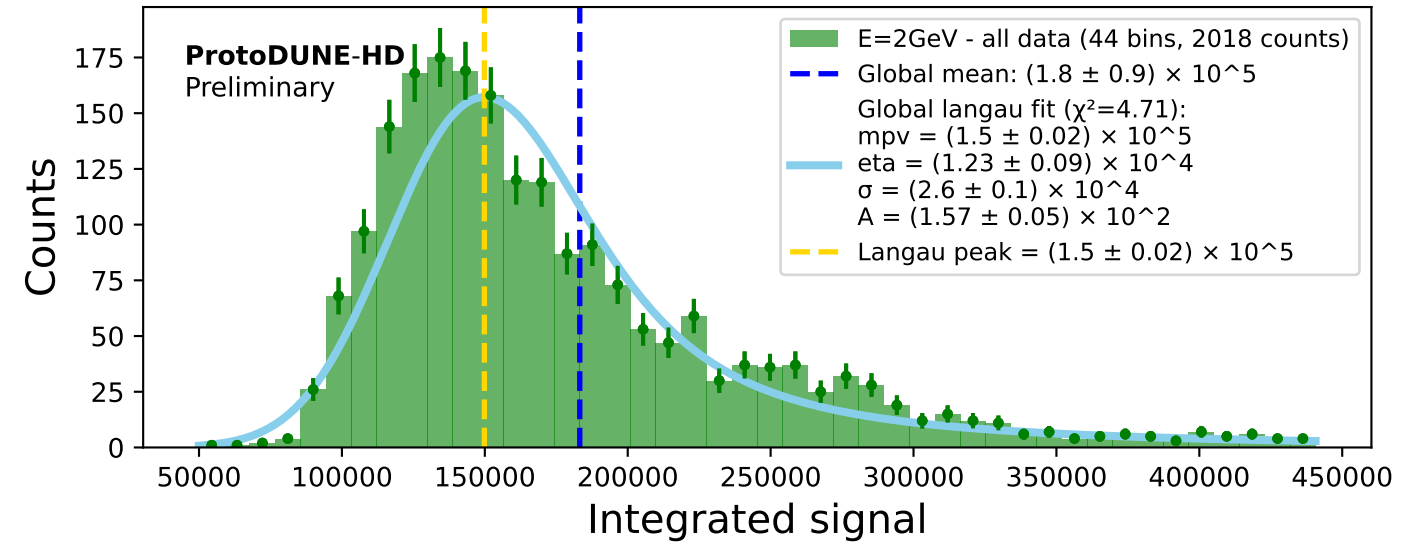


# Endpoint 109 - Channel 3 : Integral Before Analysis - 44 bins

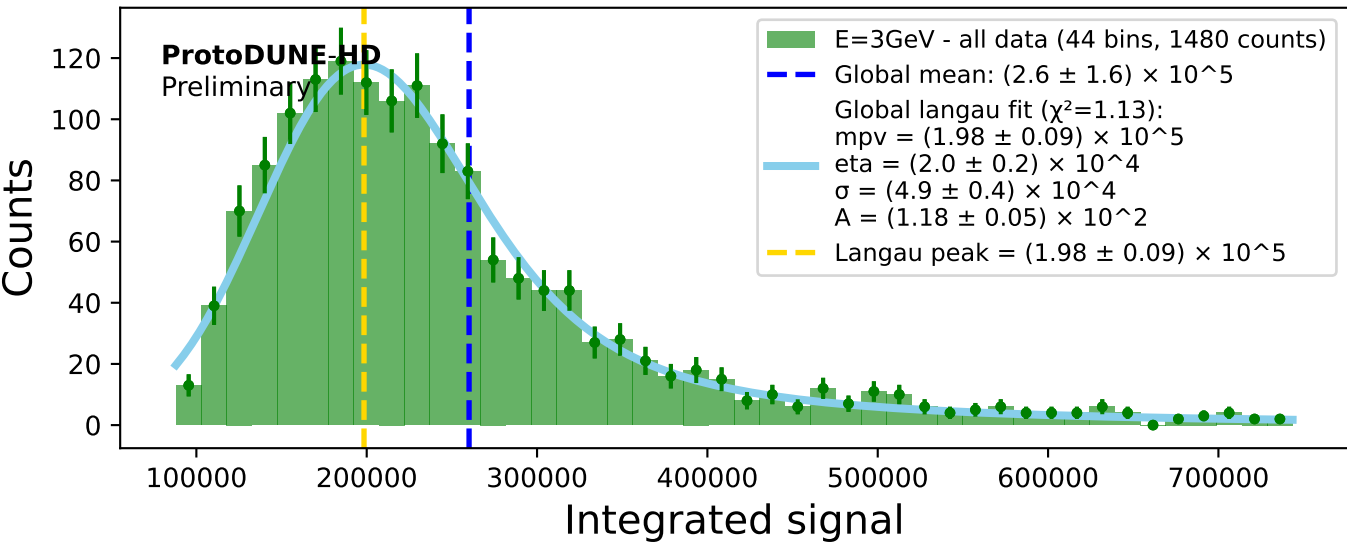
Energy: 1 GeV



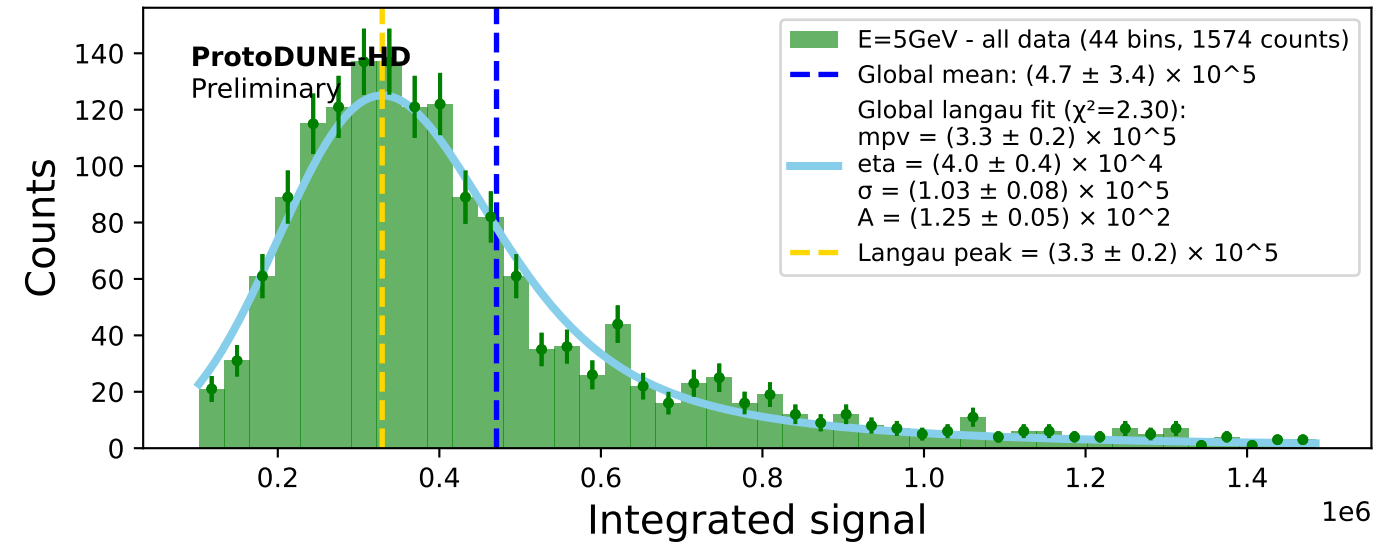
Energy: 2 GeV



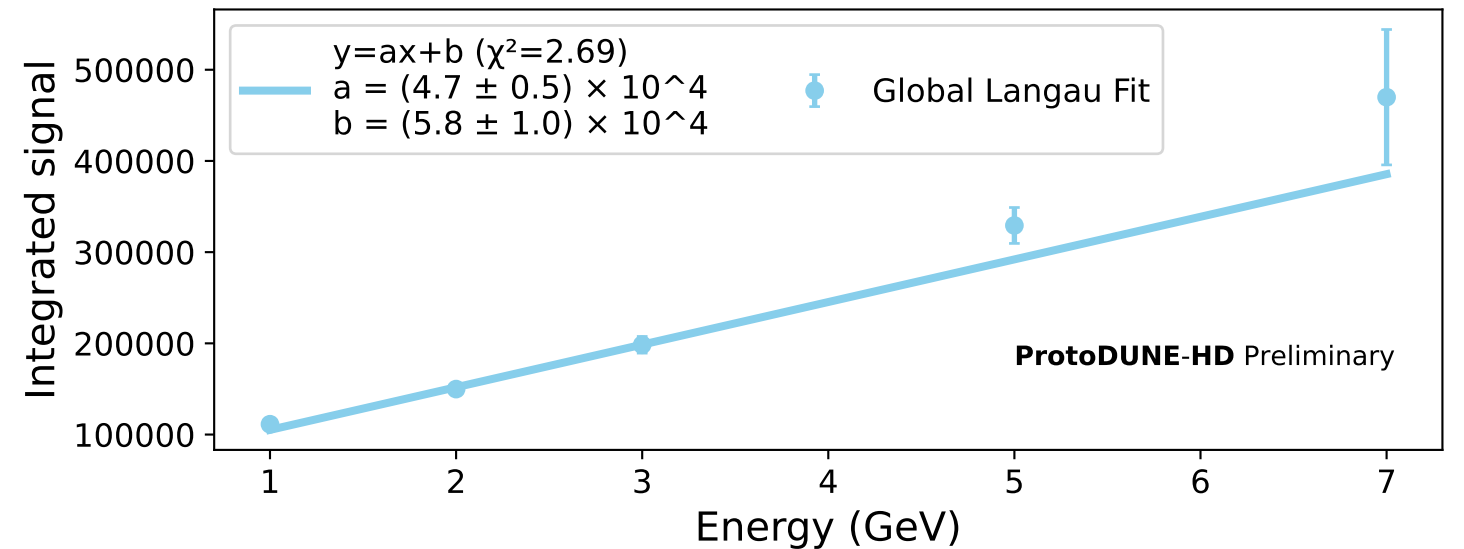
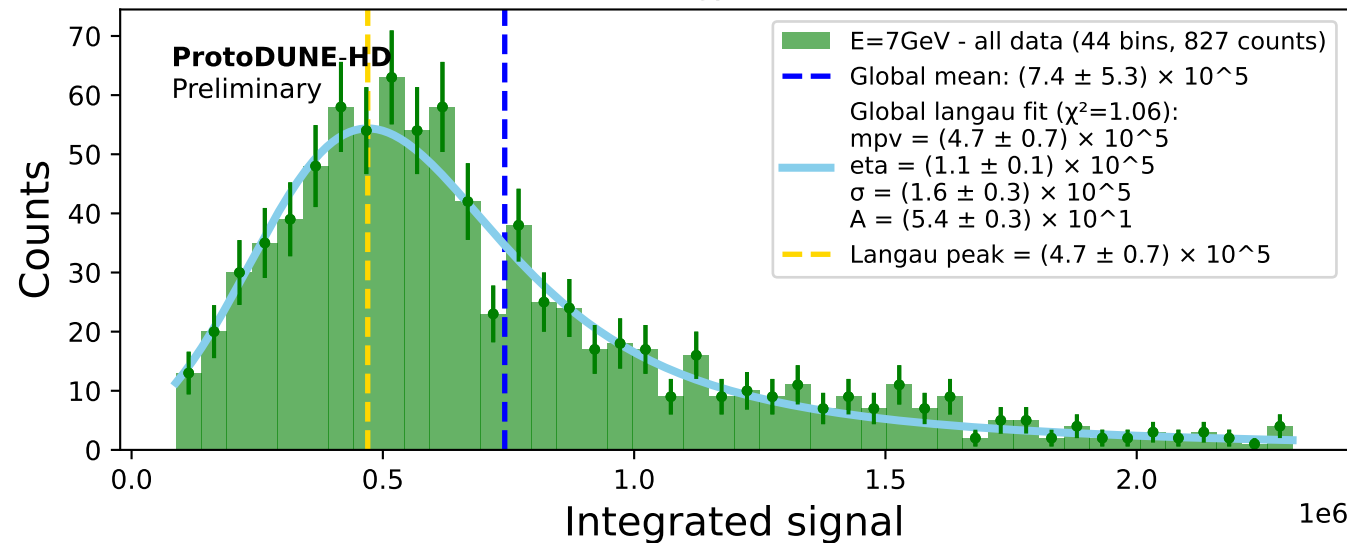
Energy: 3 GeV



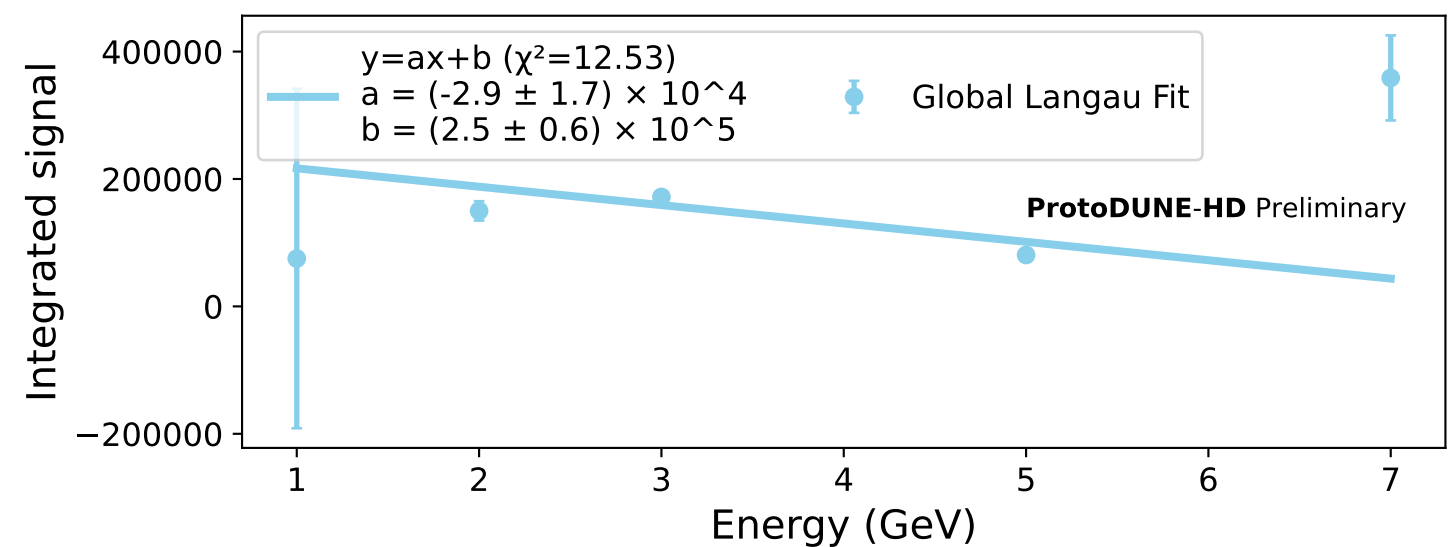
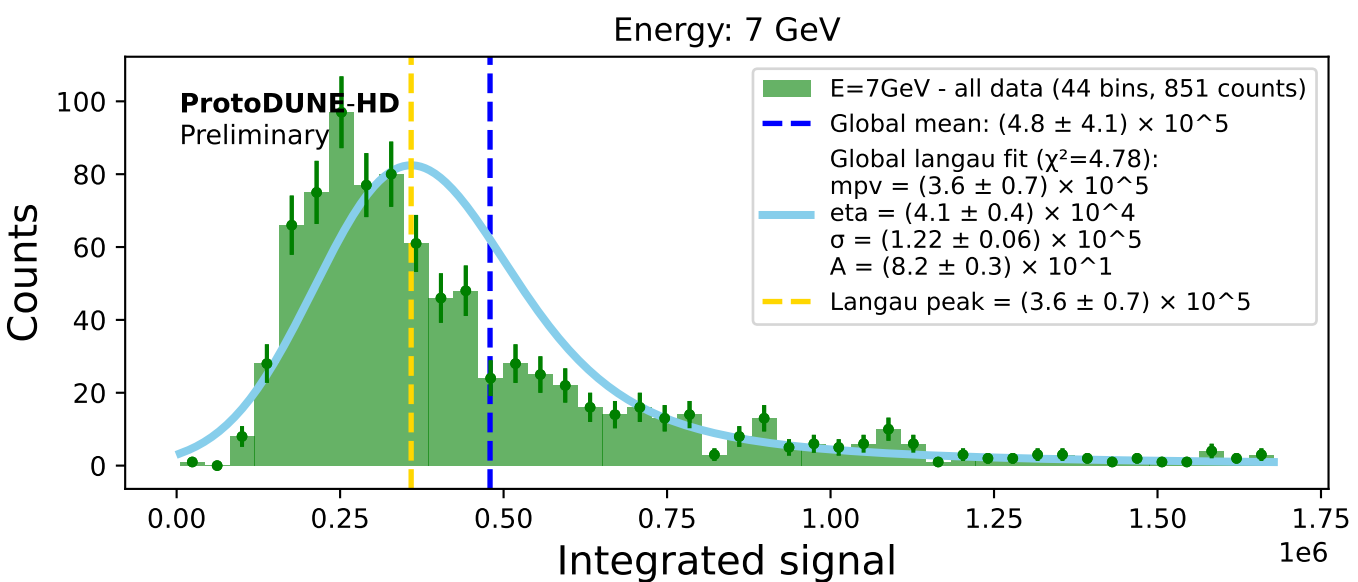
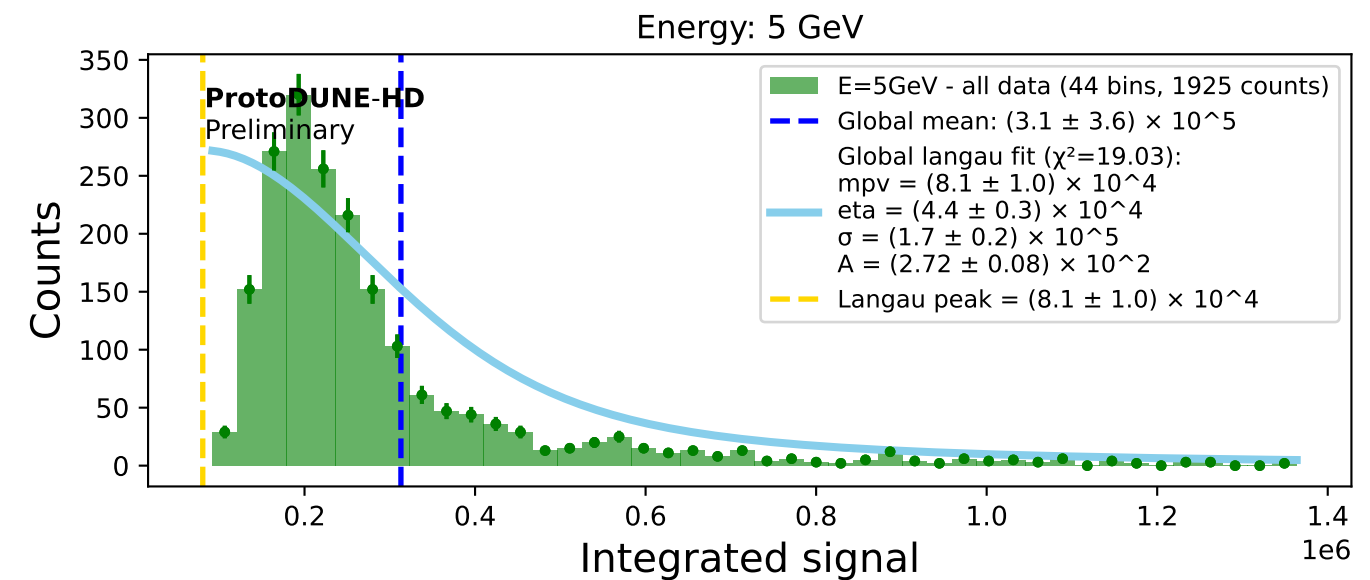
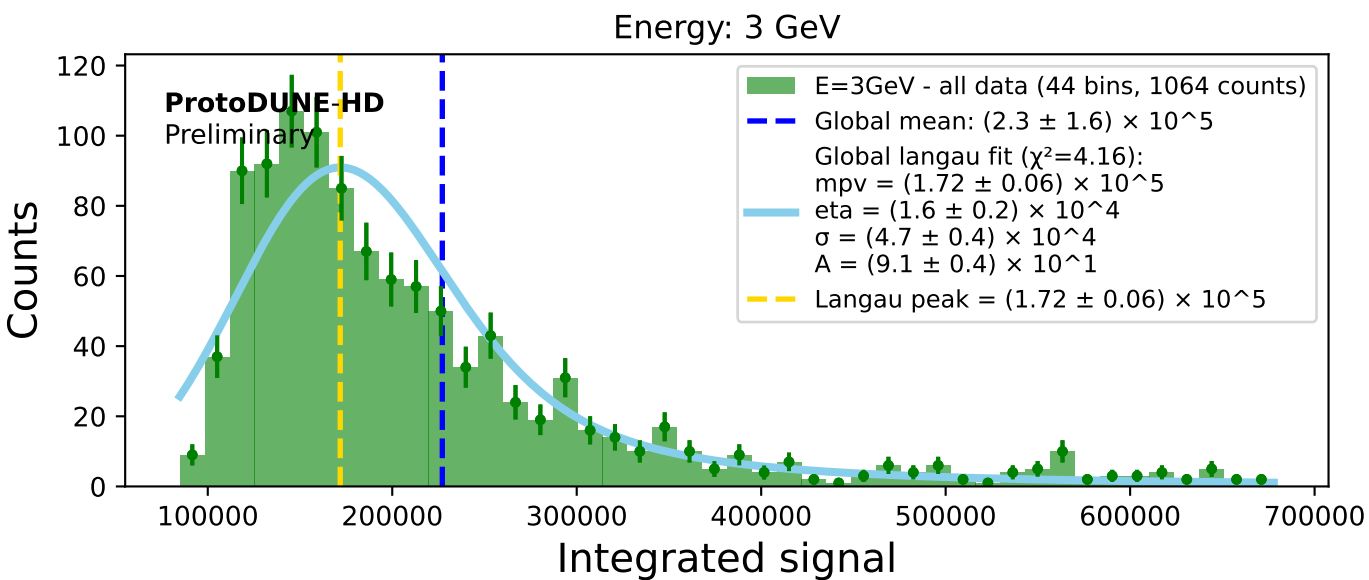
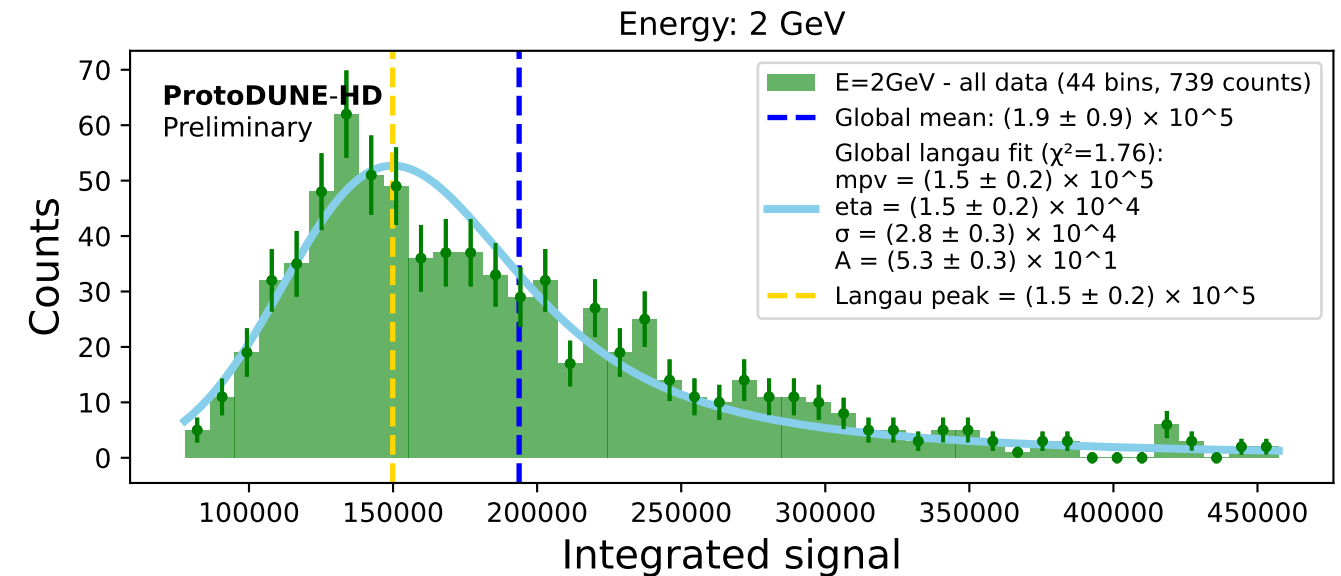
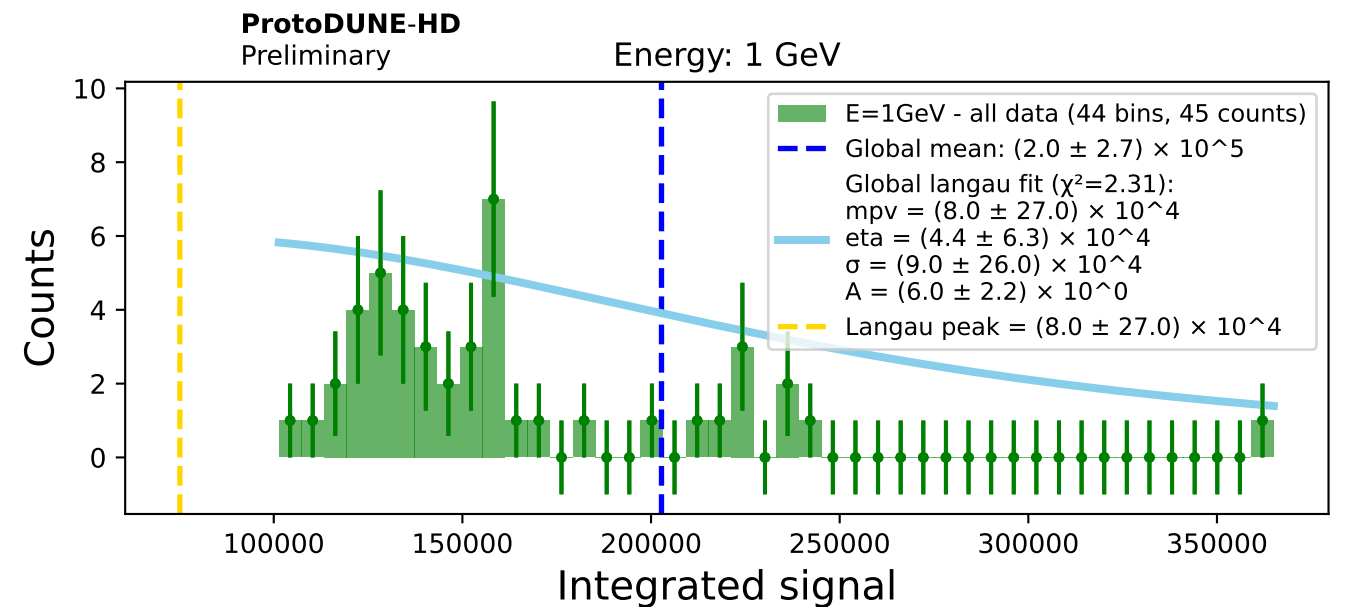
Energy: 5 GeV



Energy: 7 GeV

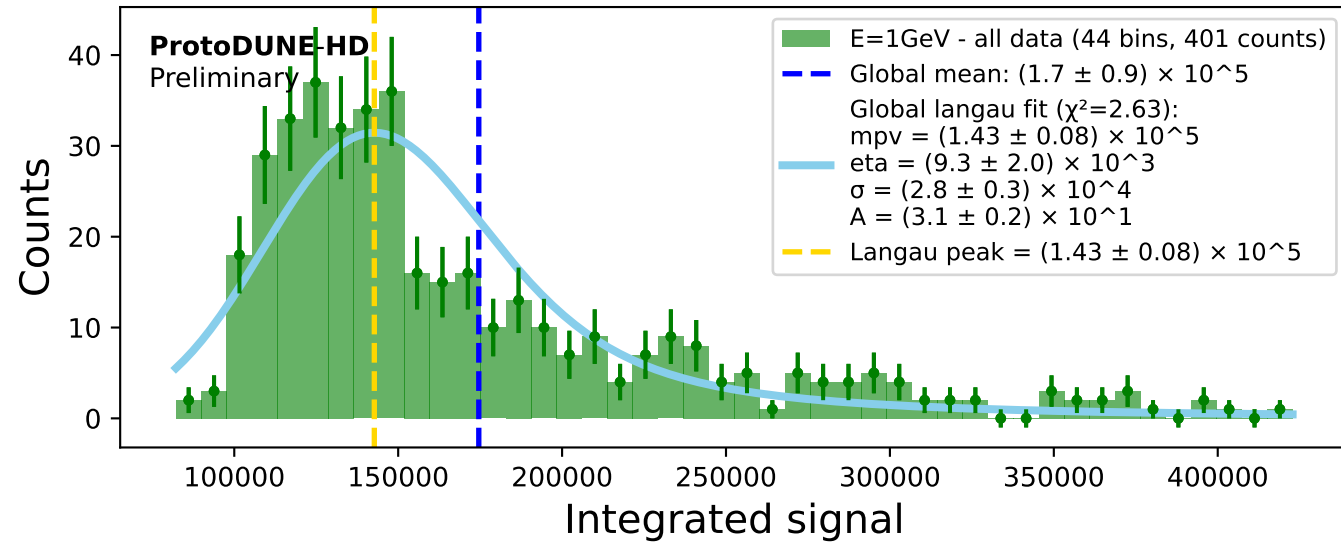


# Endpoint 109 - Channel 4 : Integral Before Analysis - 44 bins

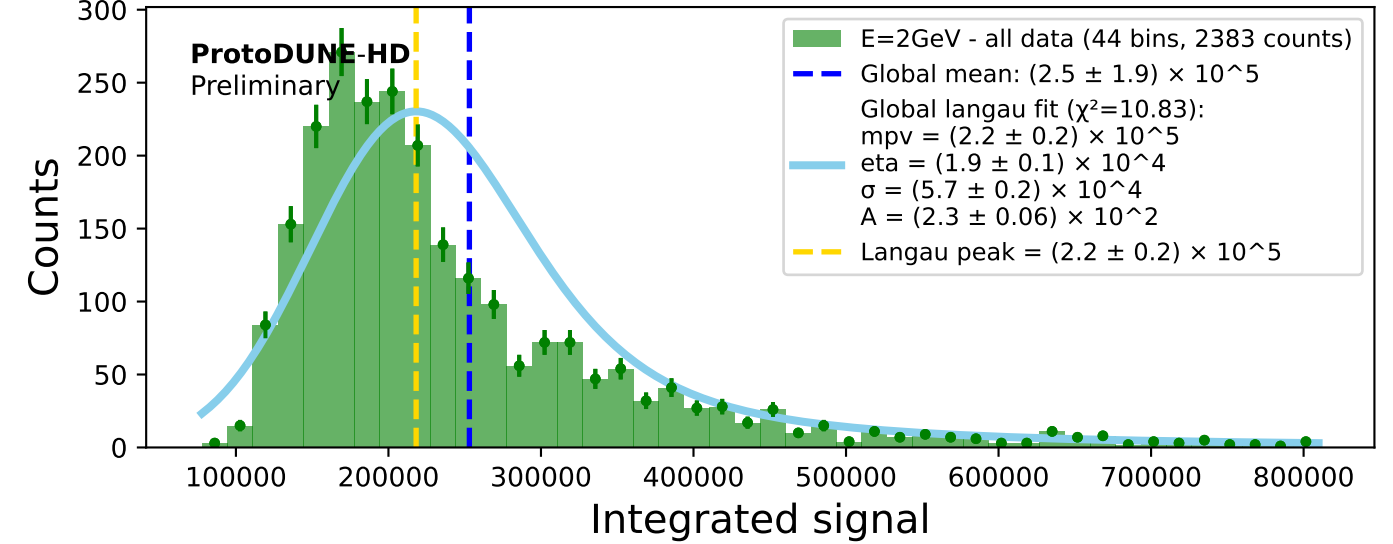


# Endpoint 109 - Channel 5 : Integral Before Analysis - 44 bins

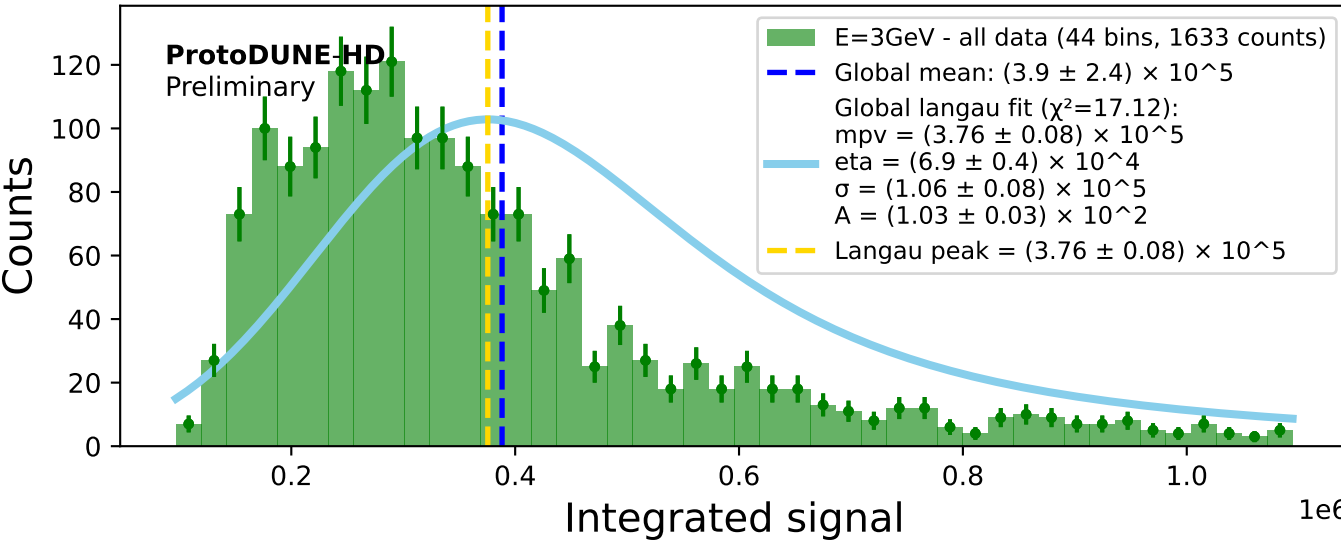
Energy: 1 GeV



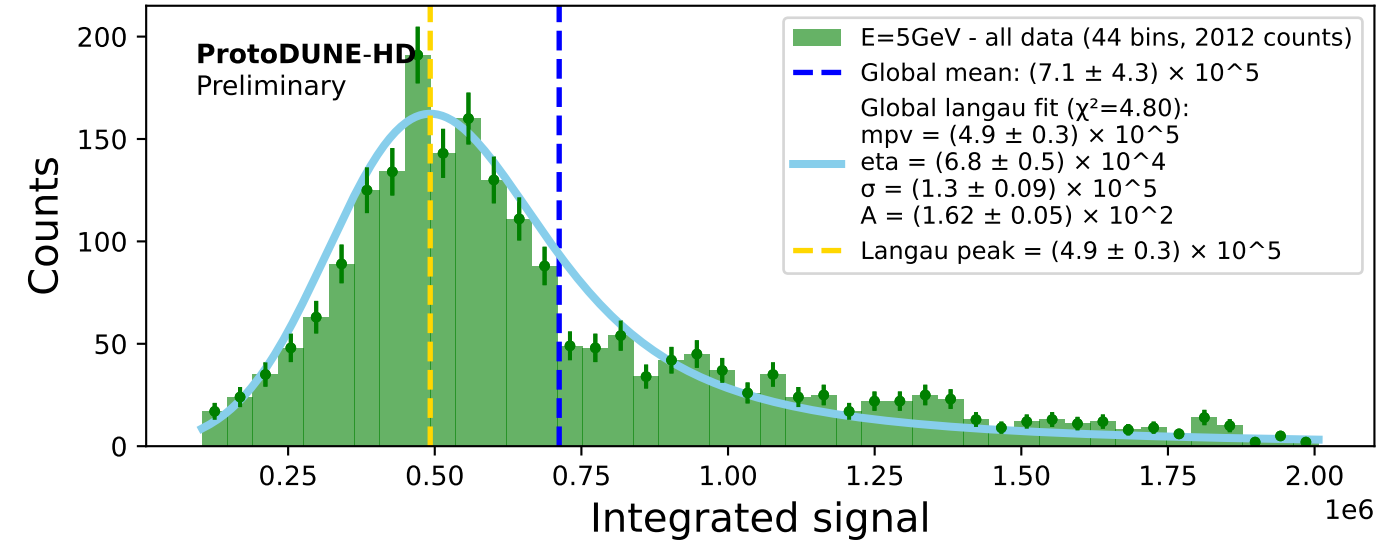
Energy: 2 GeV



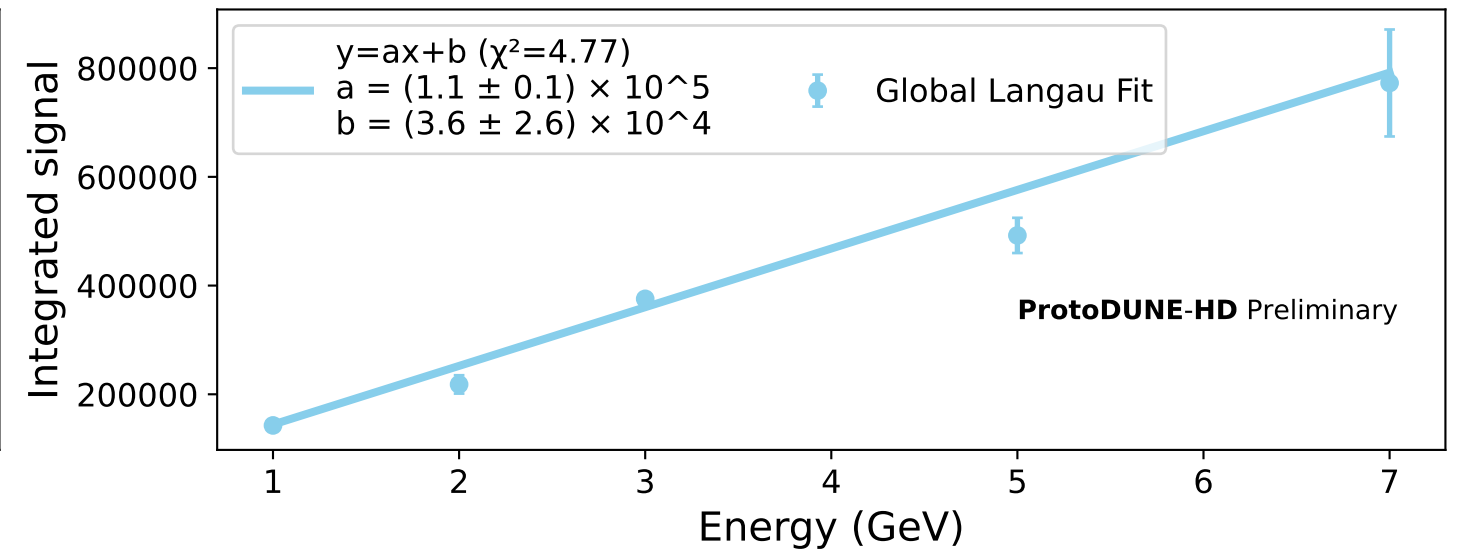
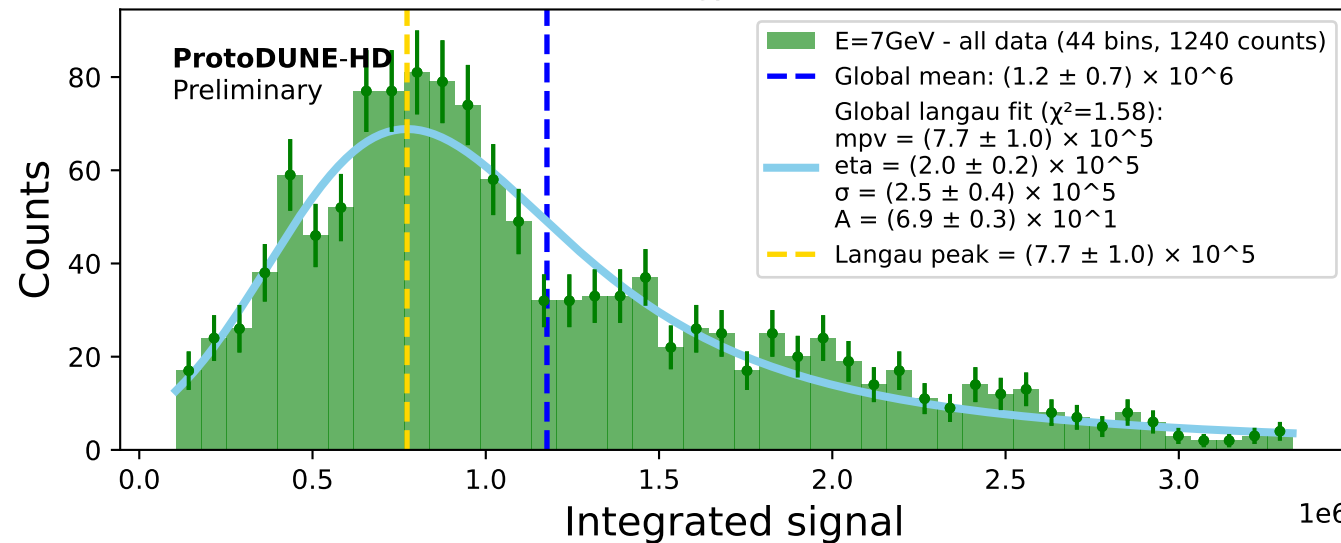
Energy: 3 GeV



Energy: 5 GeV



Energy: 7 GeV

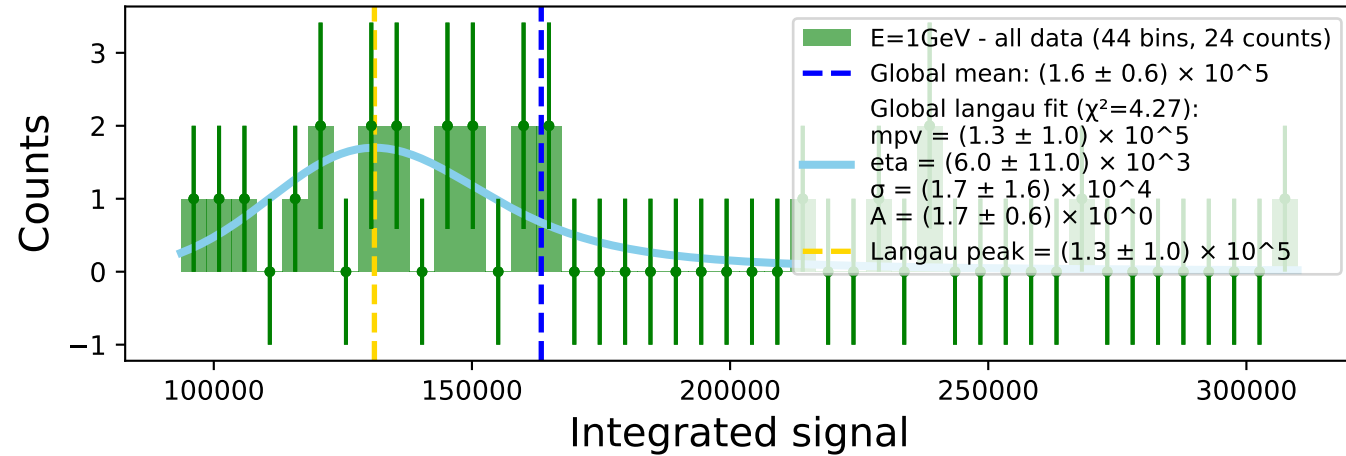




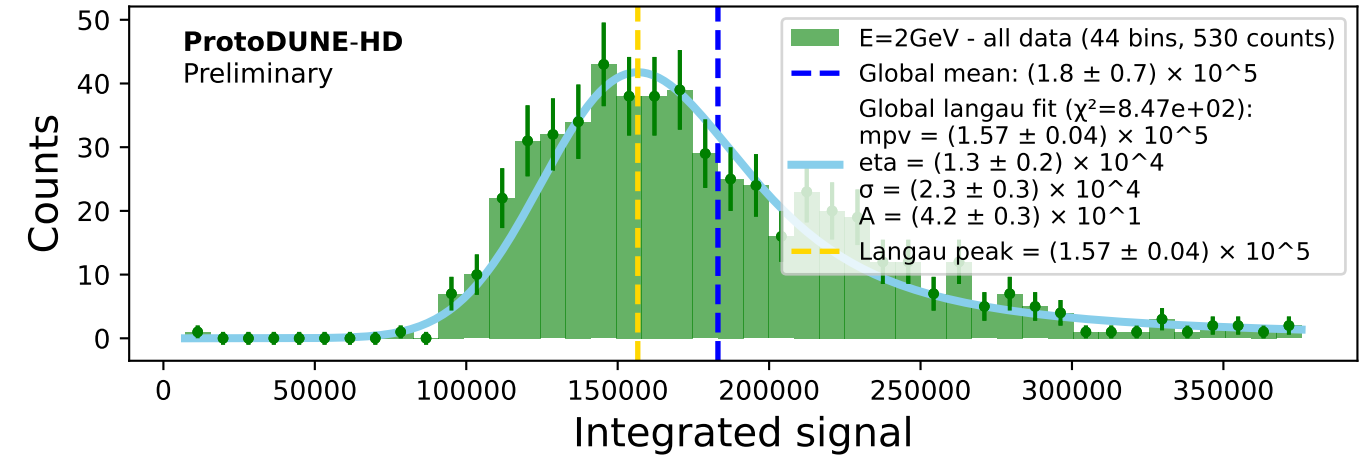
# Endpoint 109 - Channel 6 : Integral Before Analysis - 44 bins

**ProtoDUNE-HD**  
Preliminary

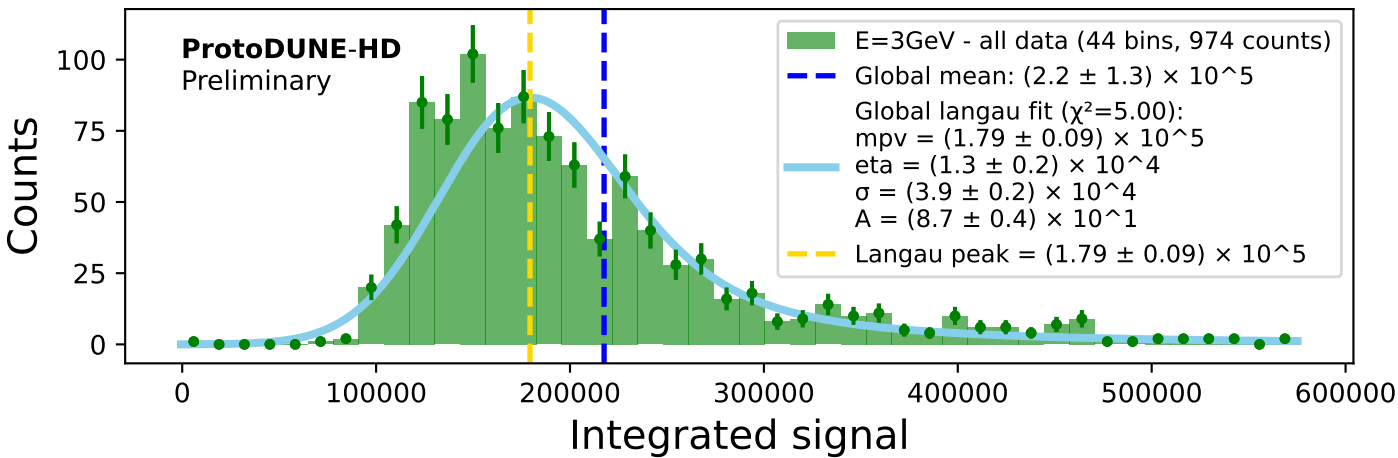
Energy: 1 GeV



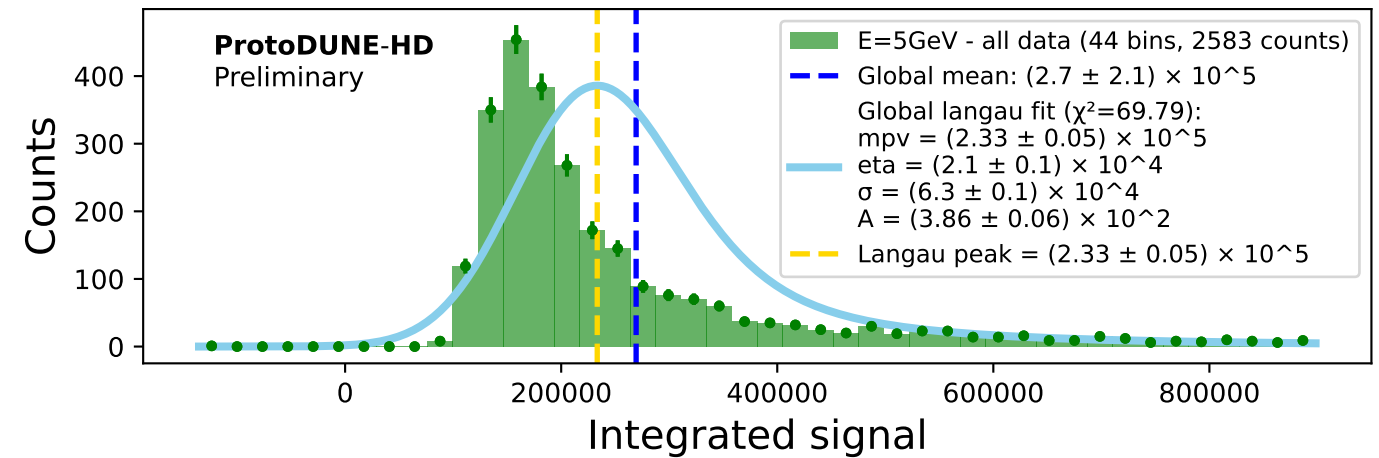
Energy: 2 GeV



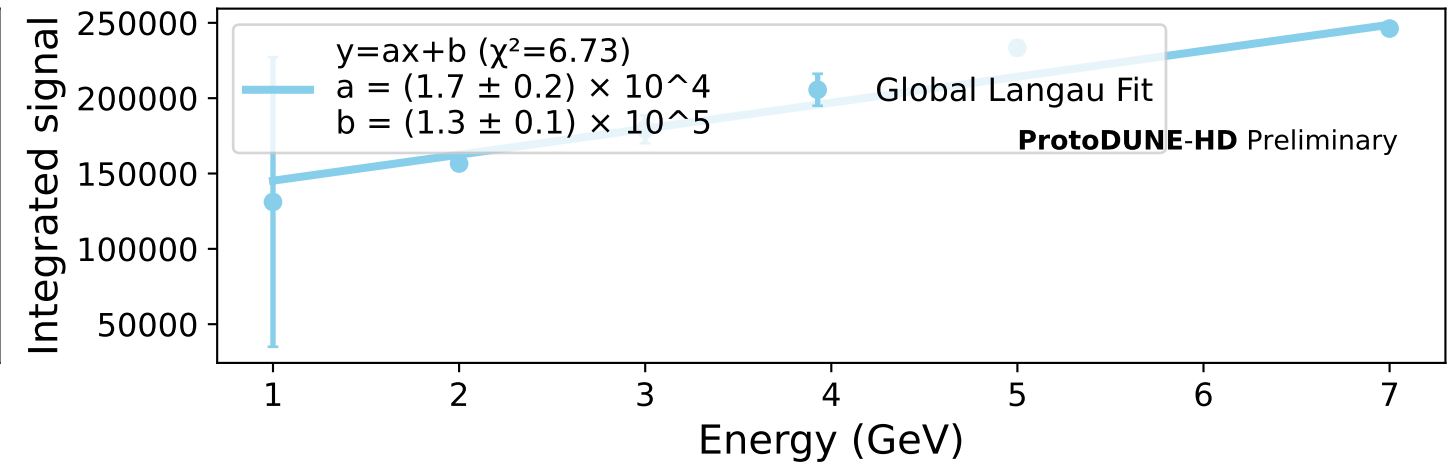
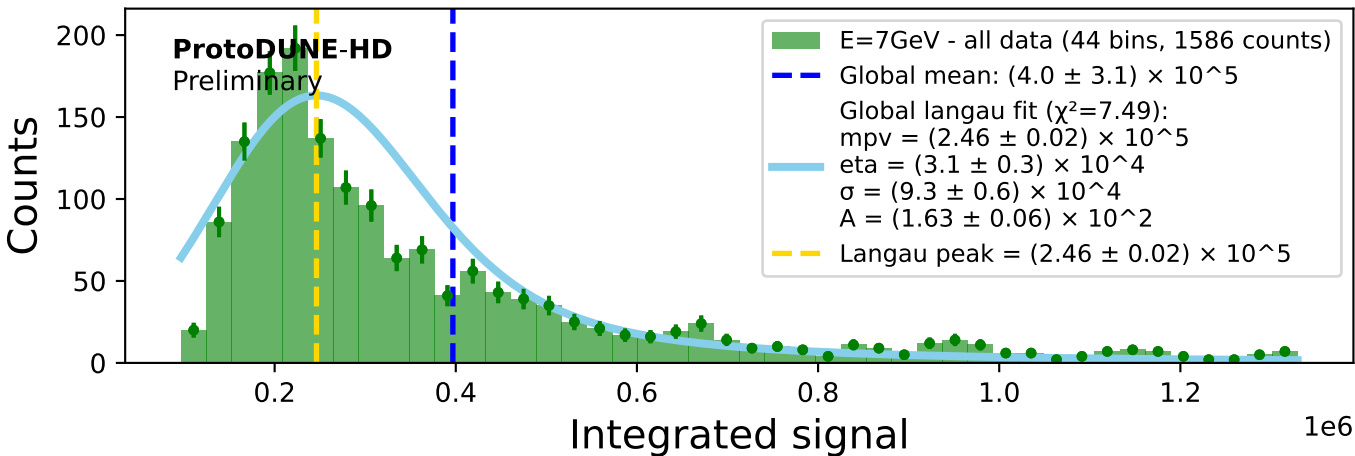
Energy: 3 GeV



Energy: 5 GeV

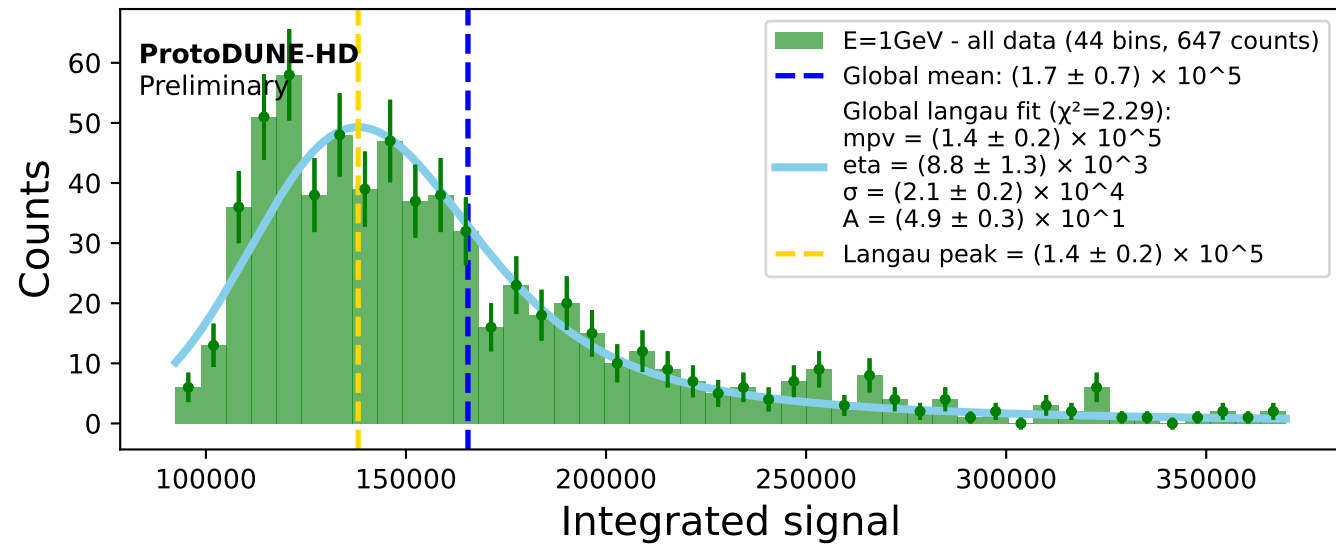


Energy: 7 GeV

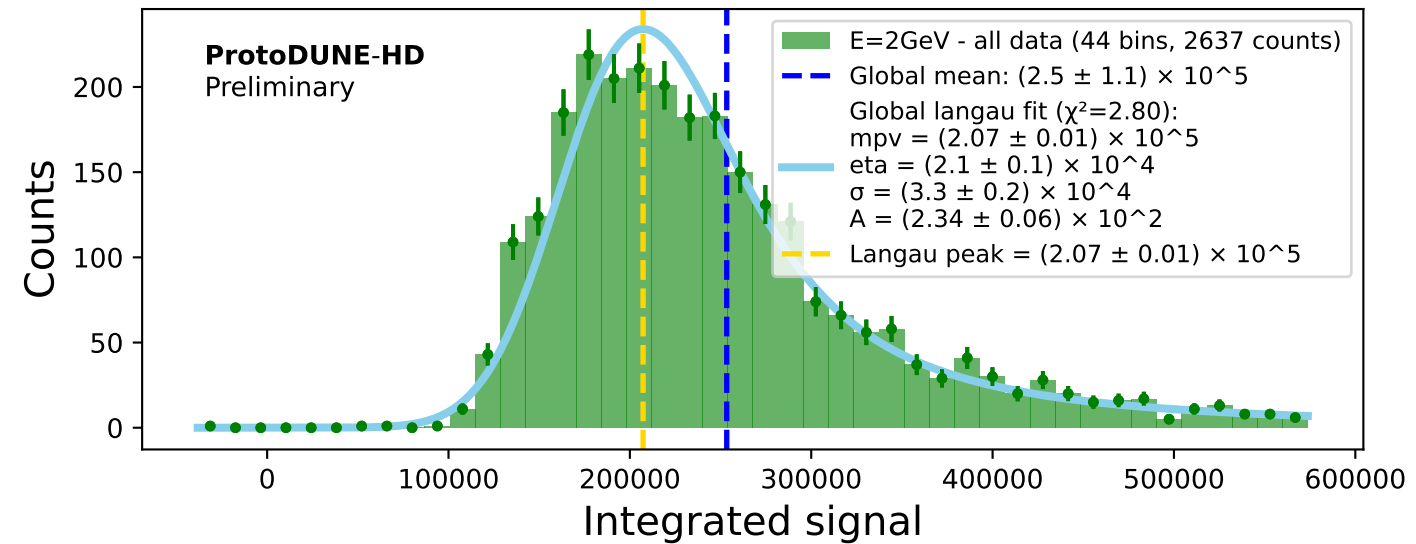


Endpoint 109 - Channel 7 : Integral Before Analysis - 44 bins

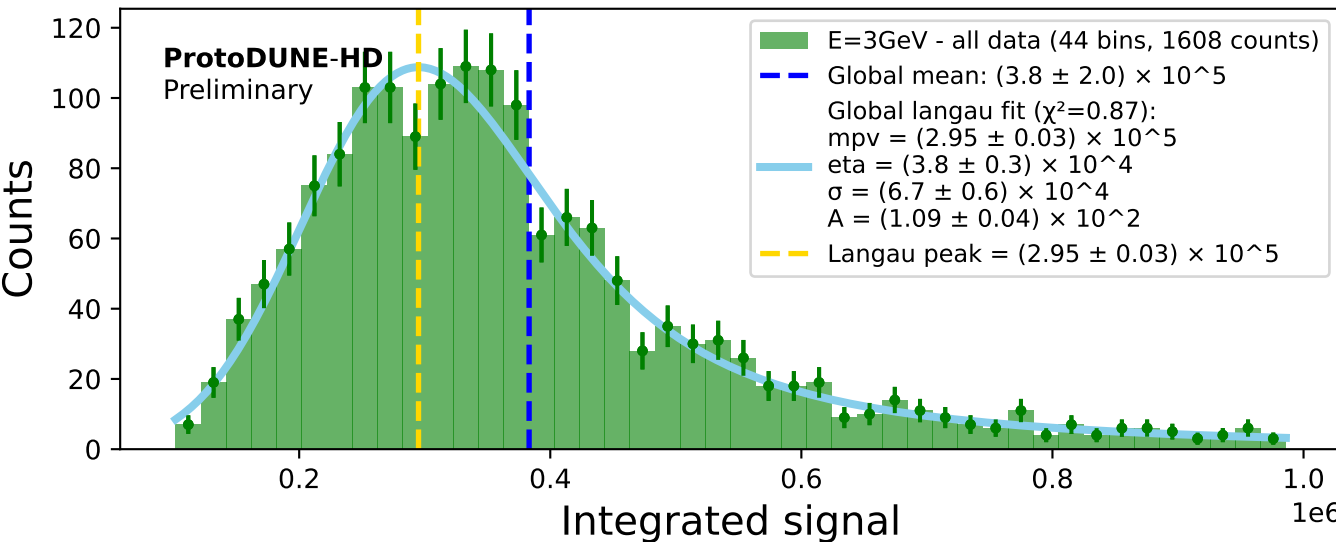
Energy: 1 GeV



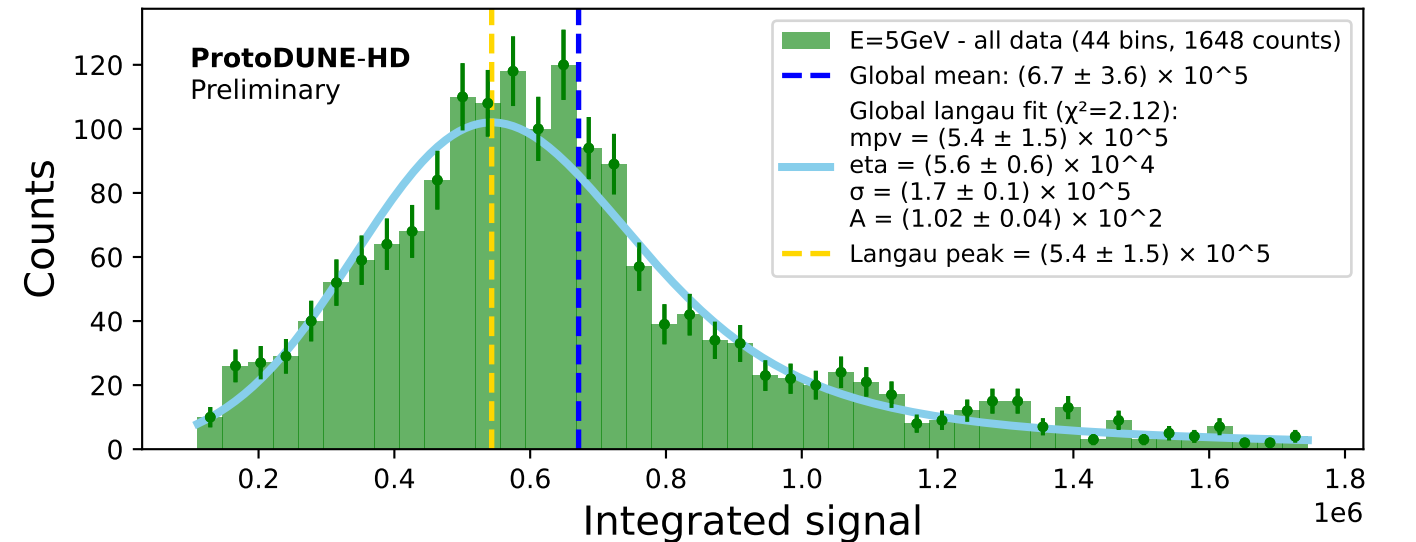
Energy: 2 GeV



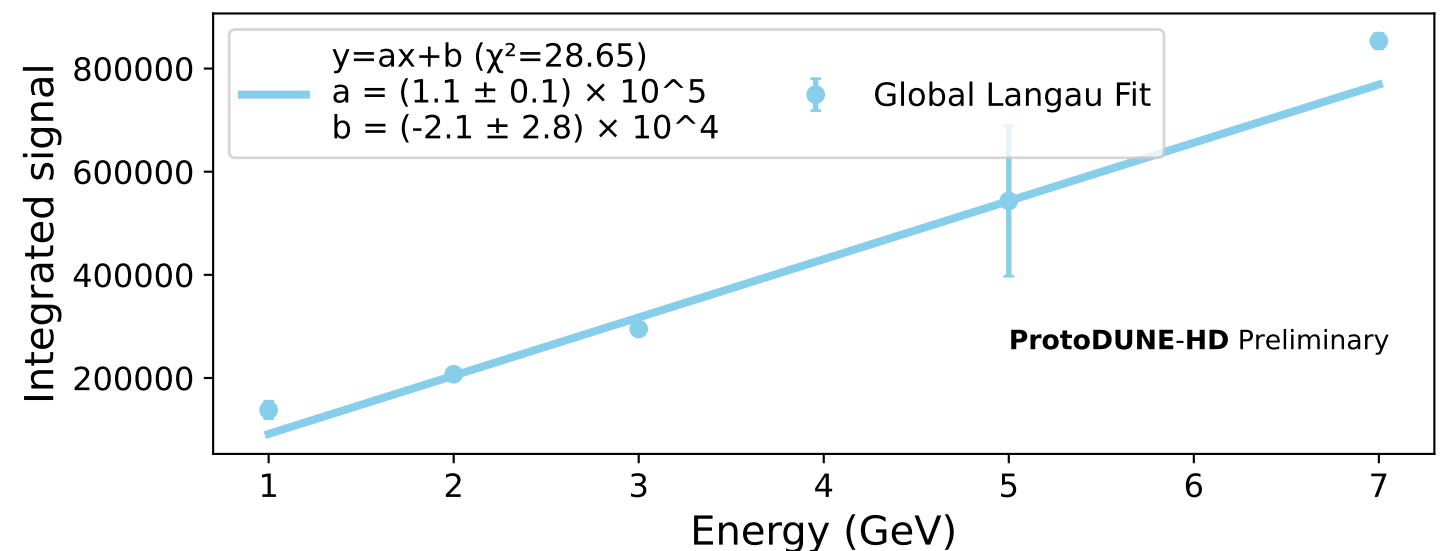
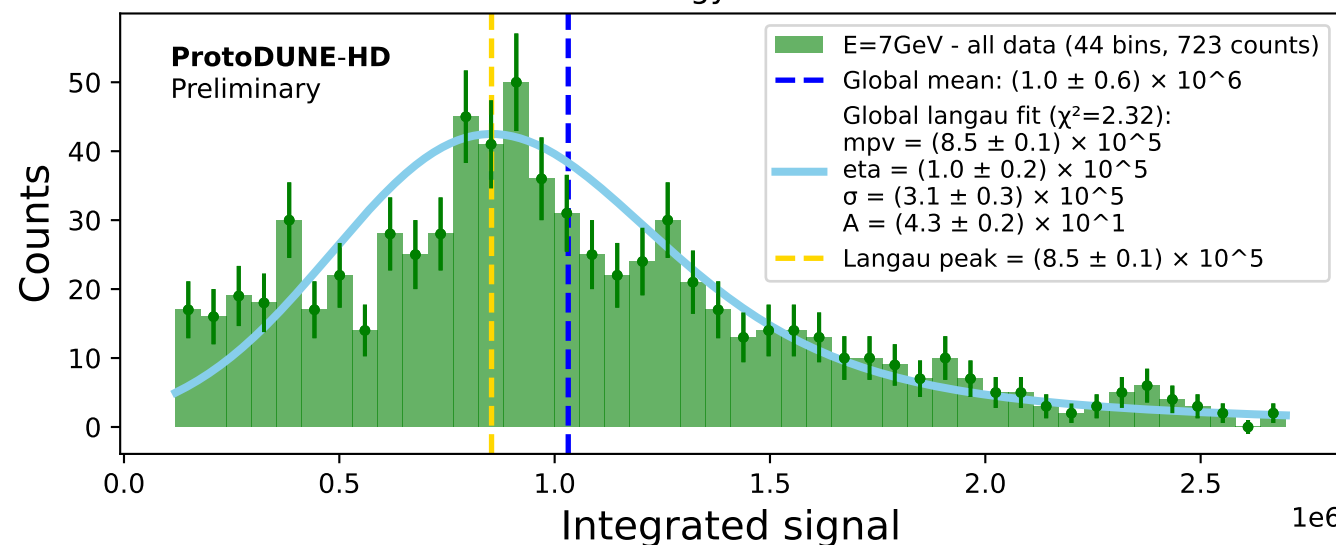
Energy: 3 GeV



Energy: 5 GeV



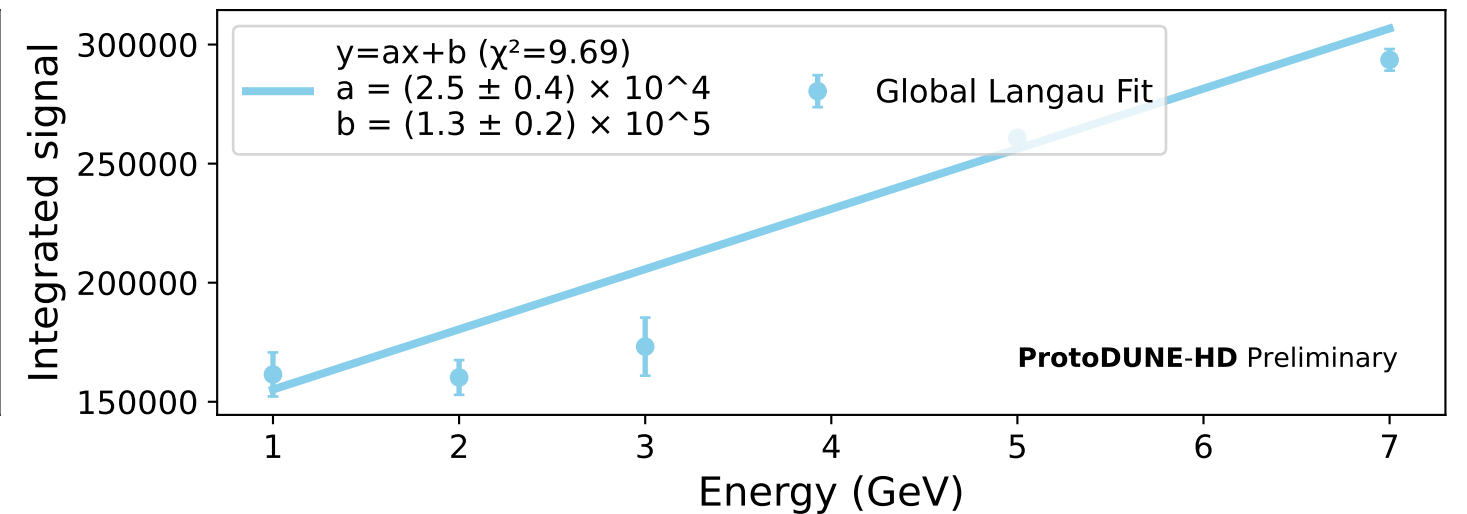
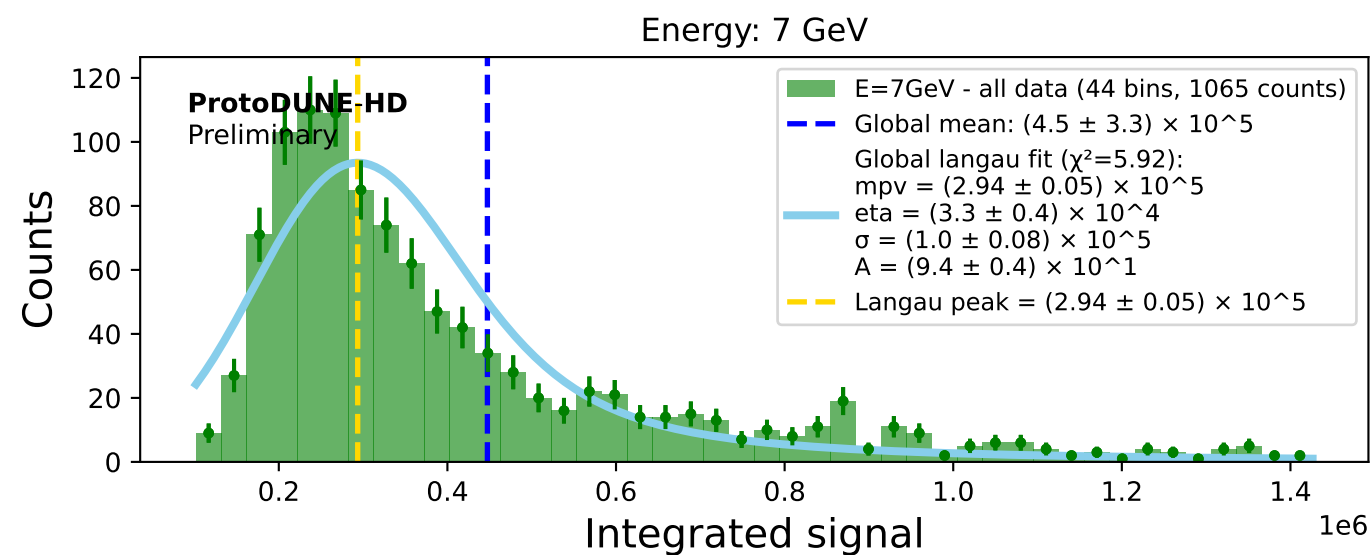
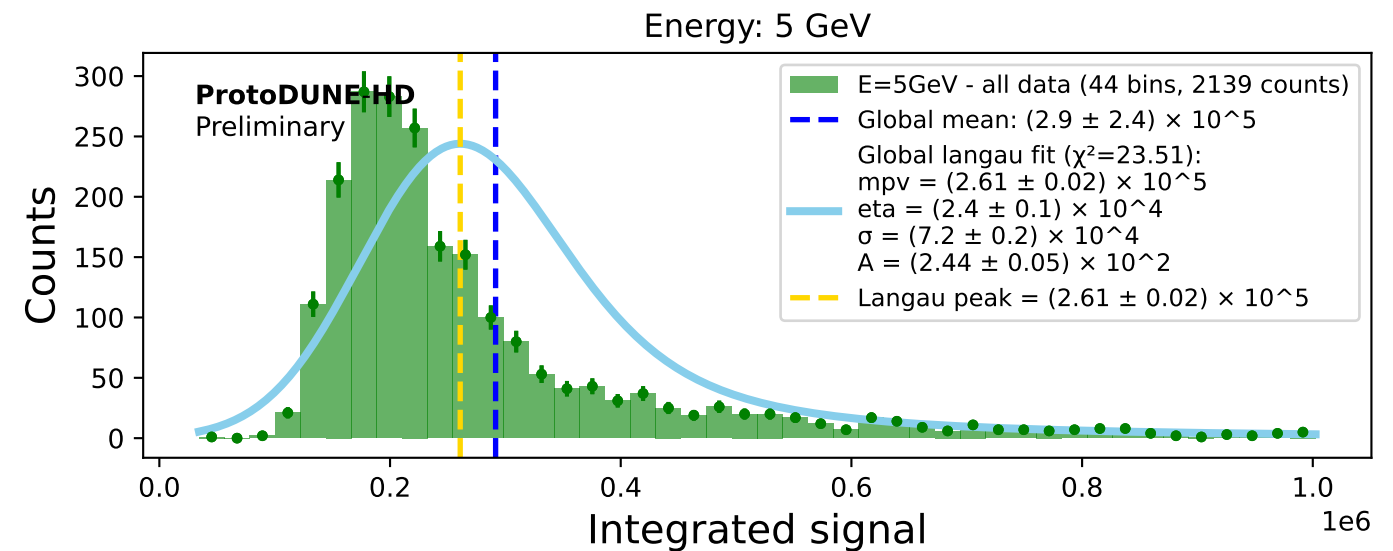
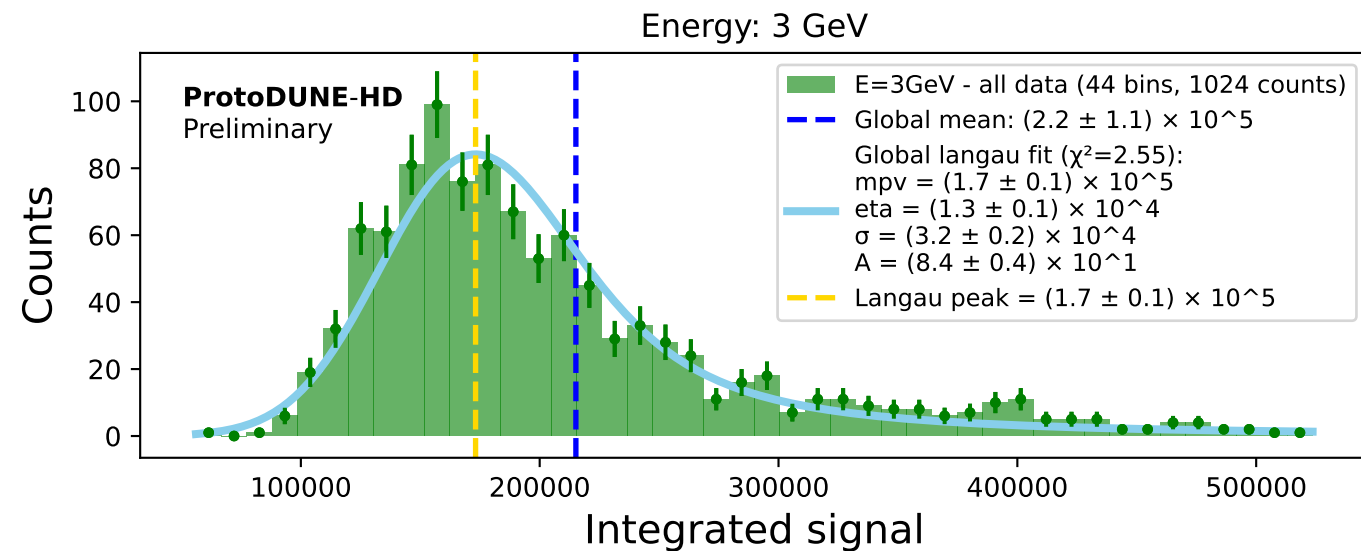
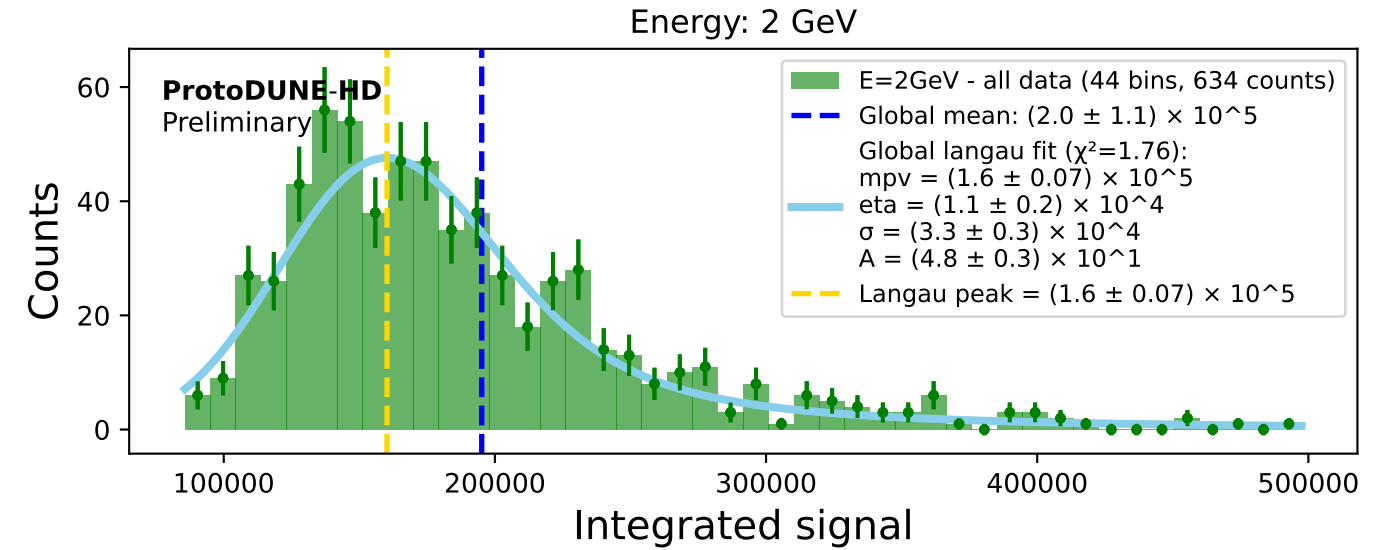
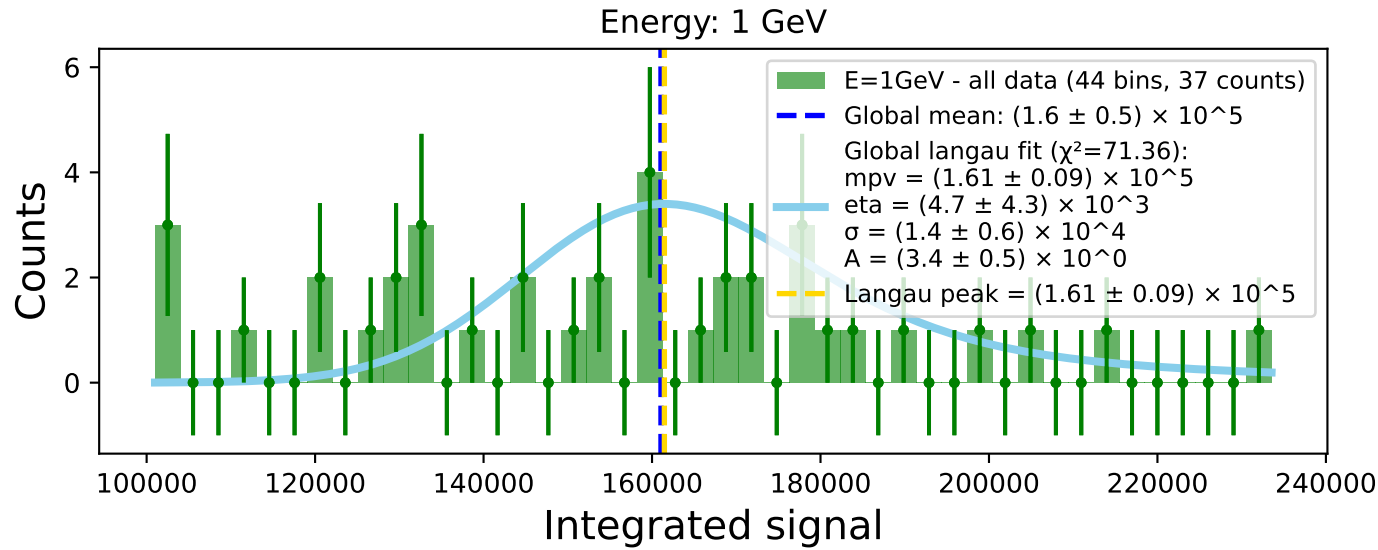
Energy: 7 GeV



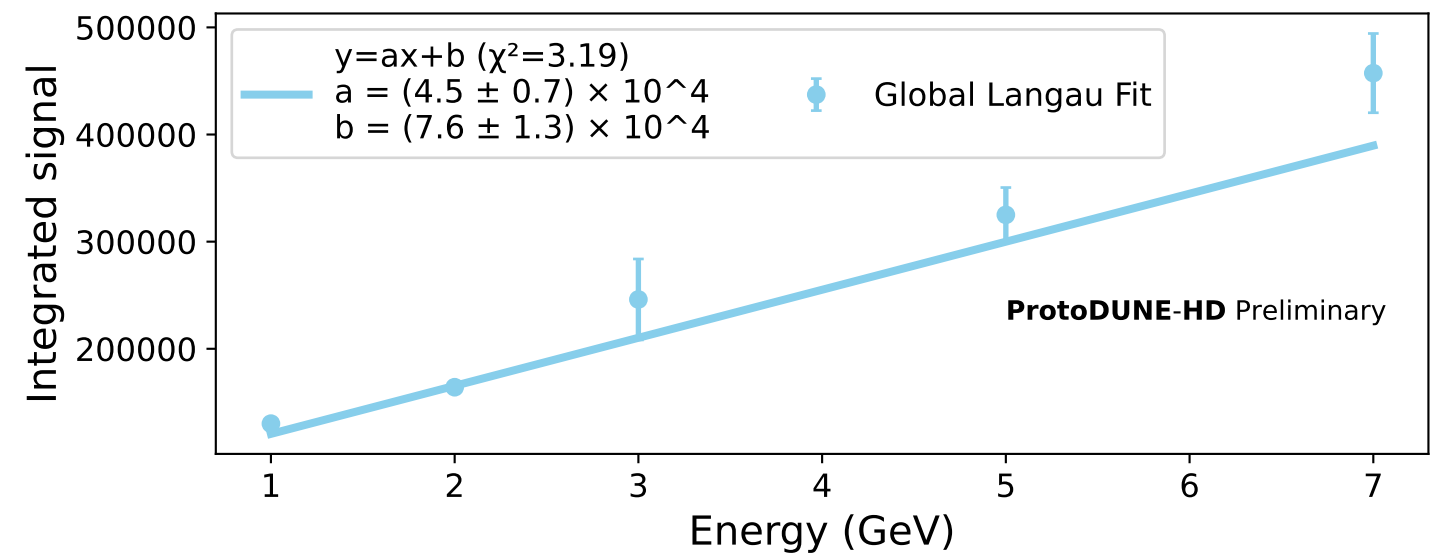
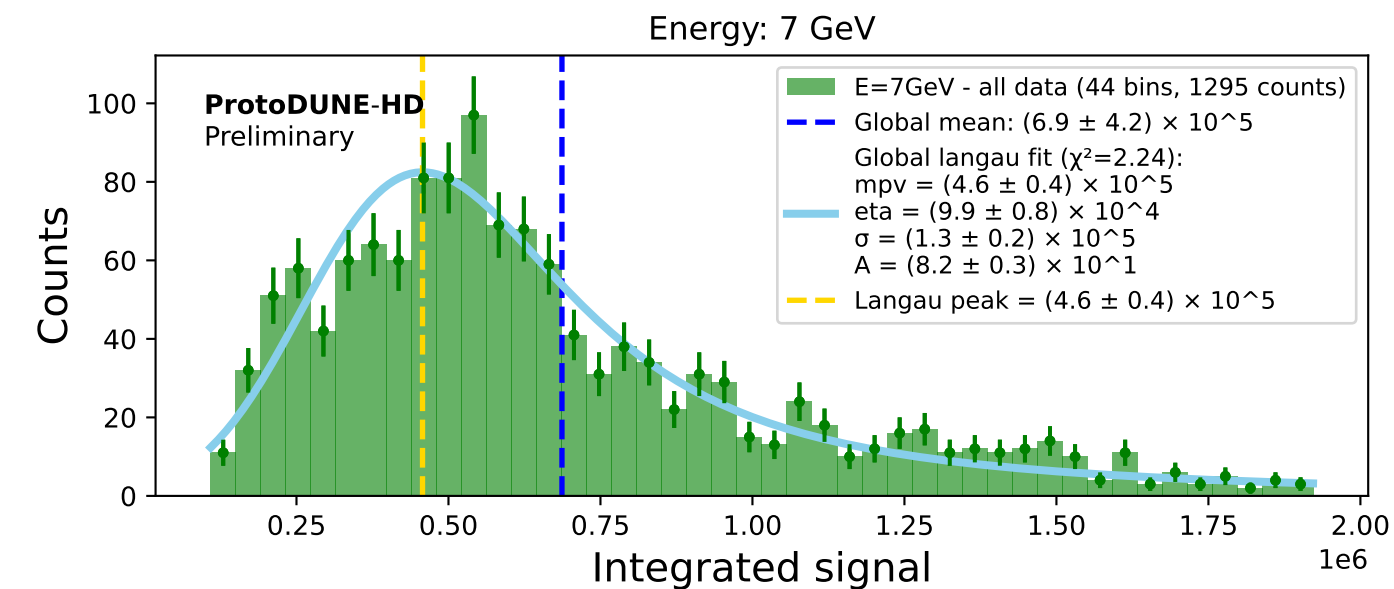
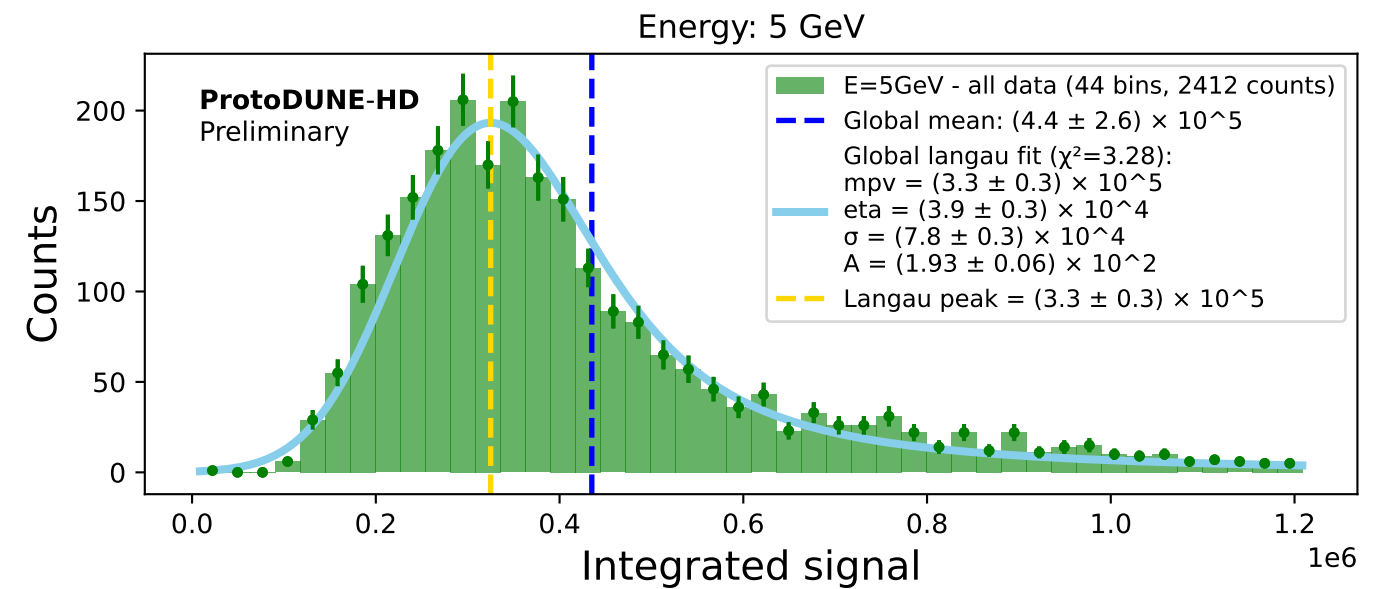
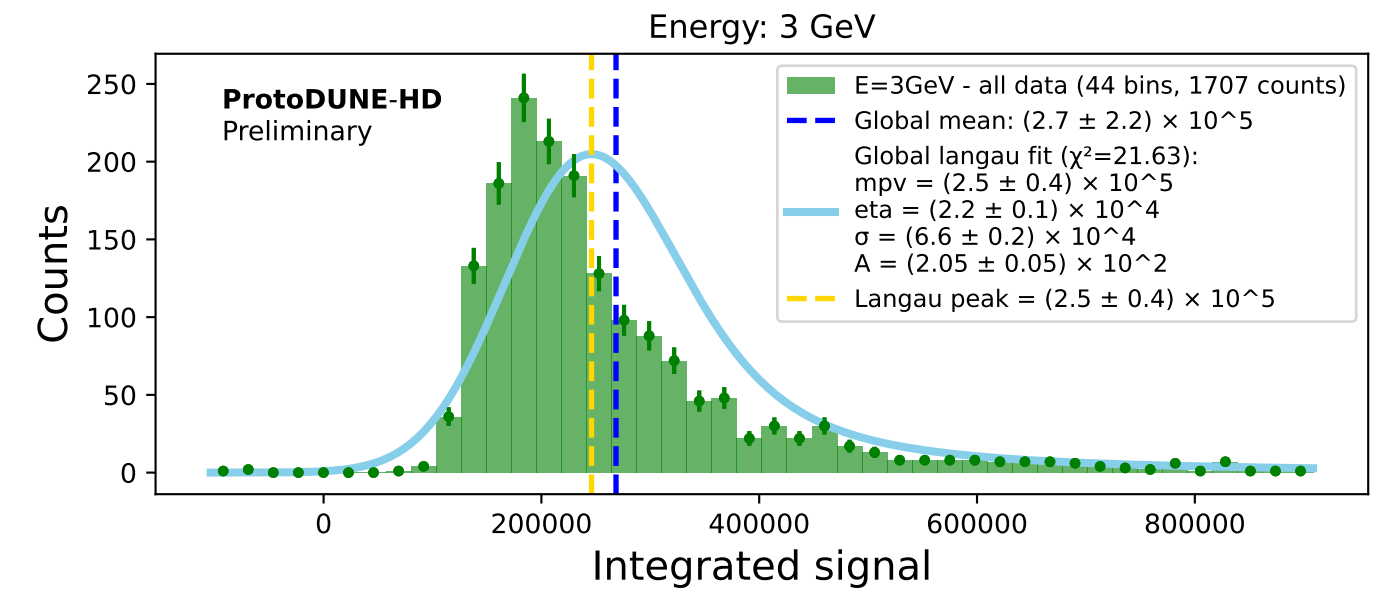
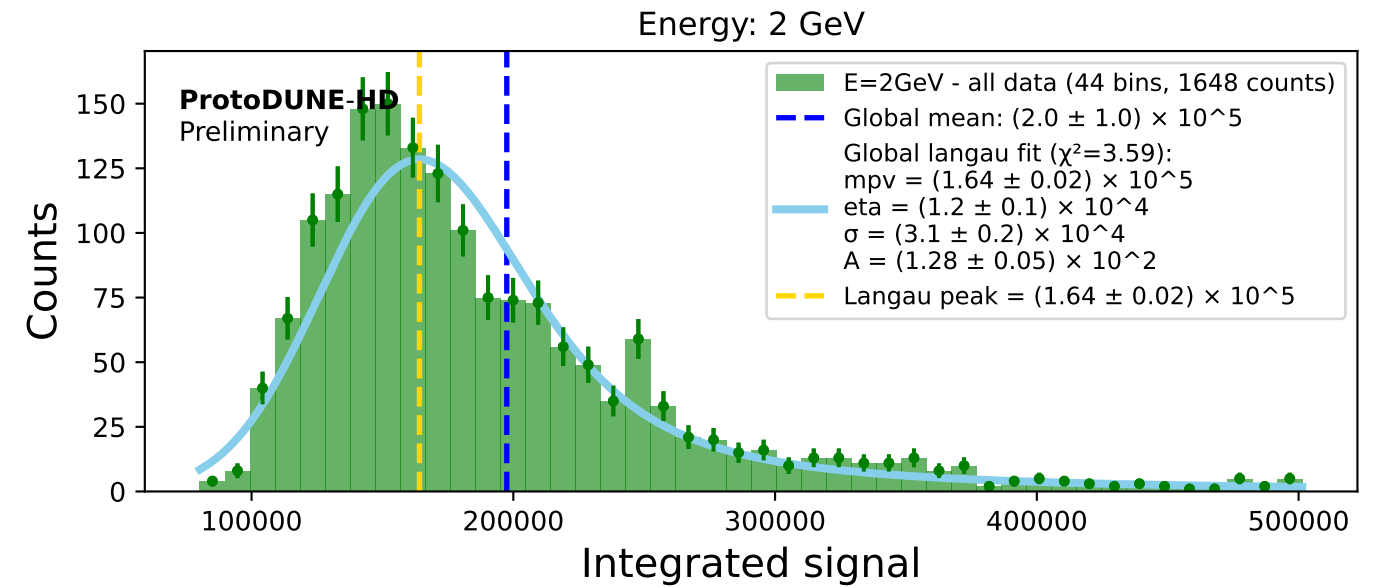
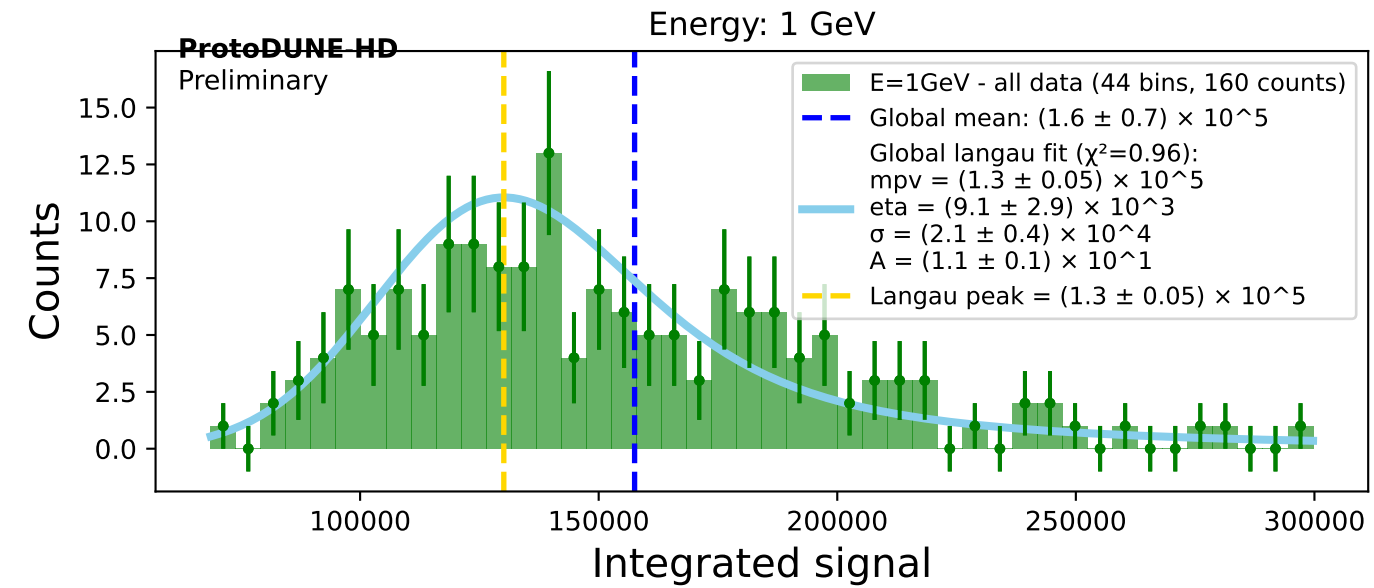


# Endpoint 109 - Channel 12 : Integral Before Analysis - 44 bins

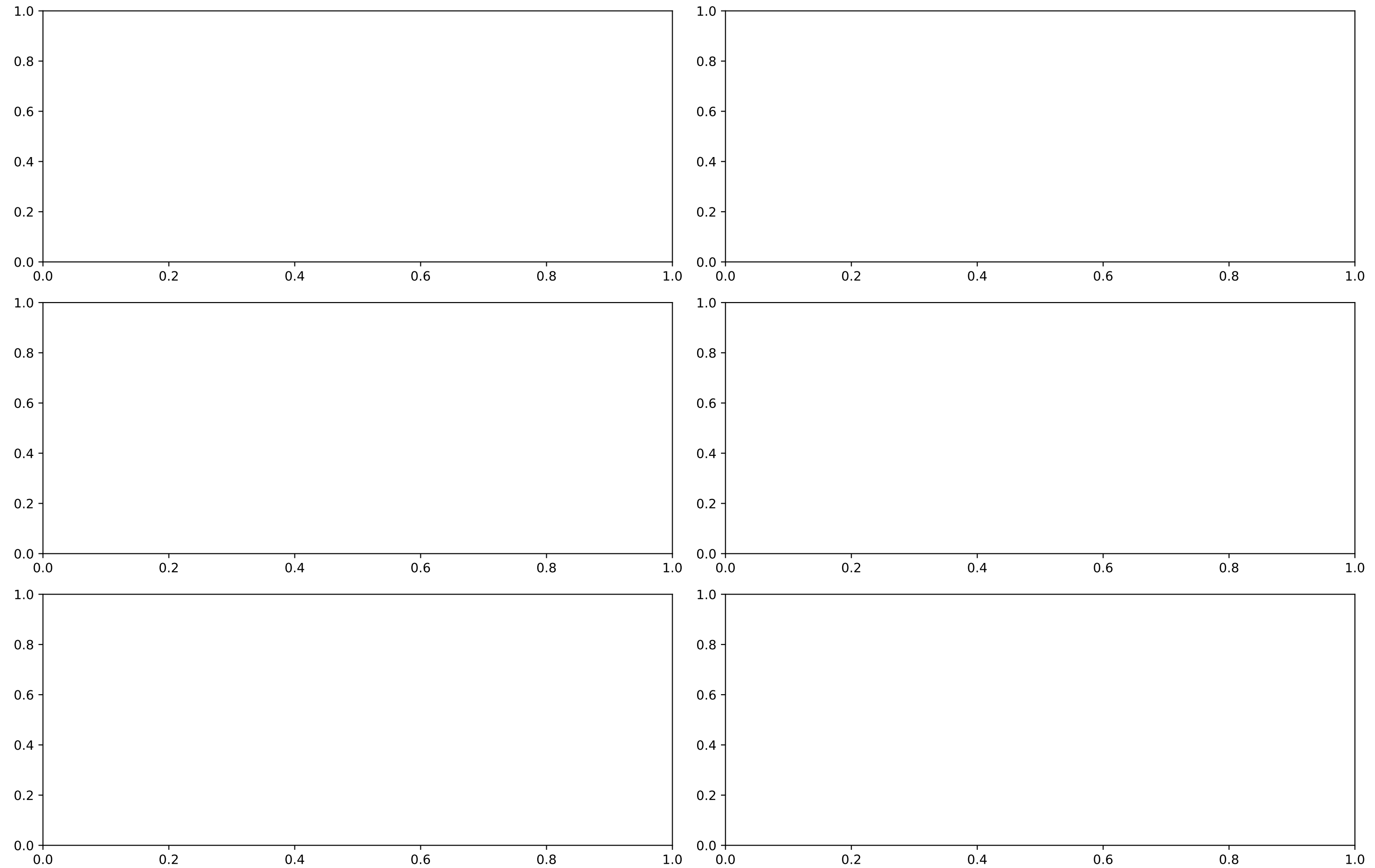
**ProtoDUNE-HD**  
Preliminary



# Endpoint 109 - Channel 15 : Integral Before Analysis - 44 bins



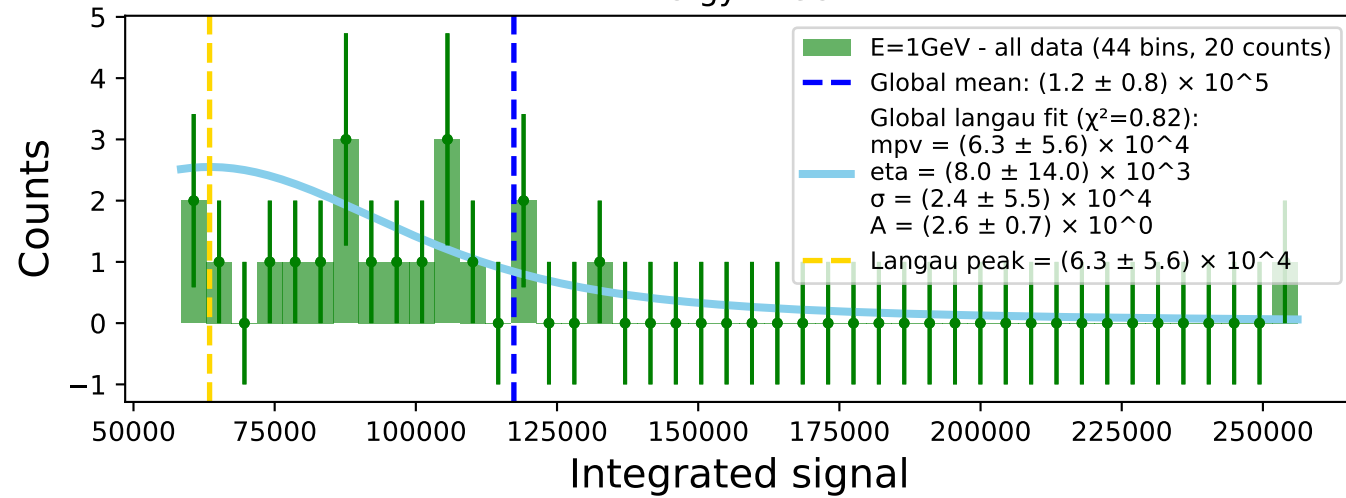
Endpoint 109 - Channel 17 : Integral Before Analysis - 44 bins



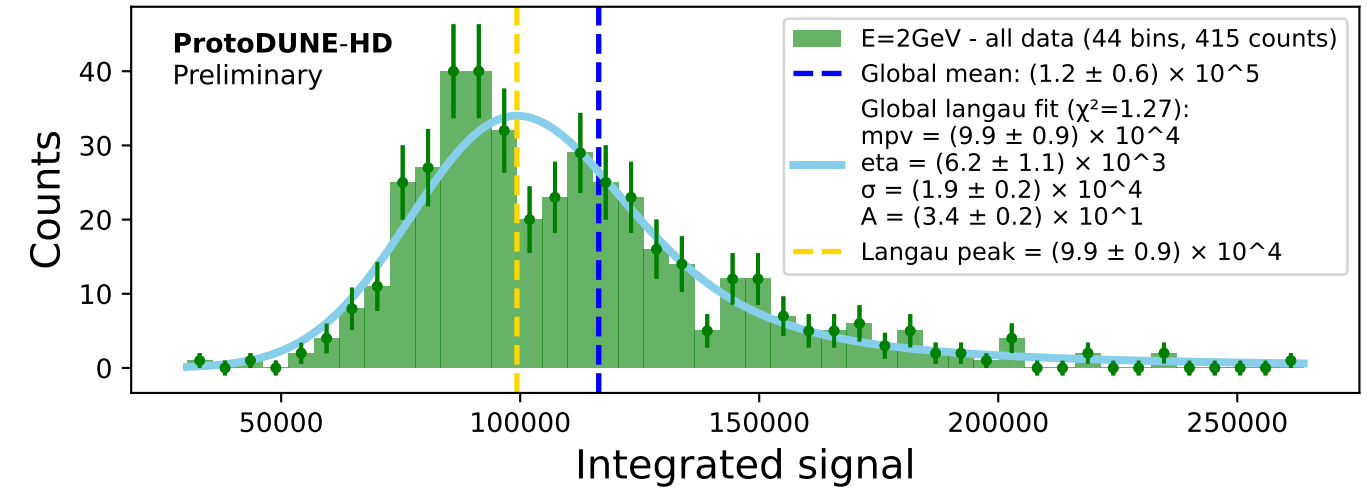
# Endpoint 109 - Channel 20 : Integral Before Analysis - 44 bins

**ProtoDUNE-HD**  
Preliminary

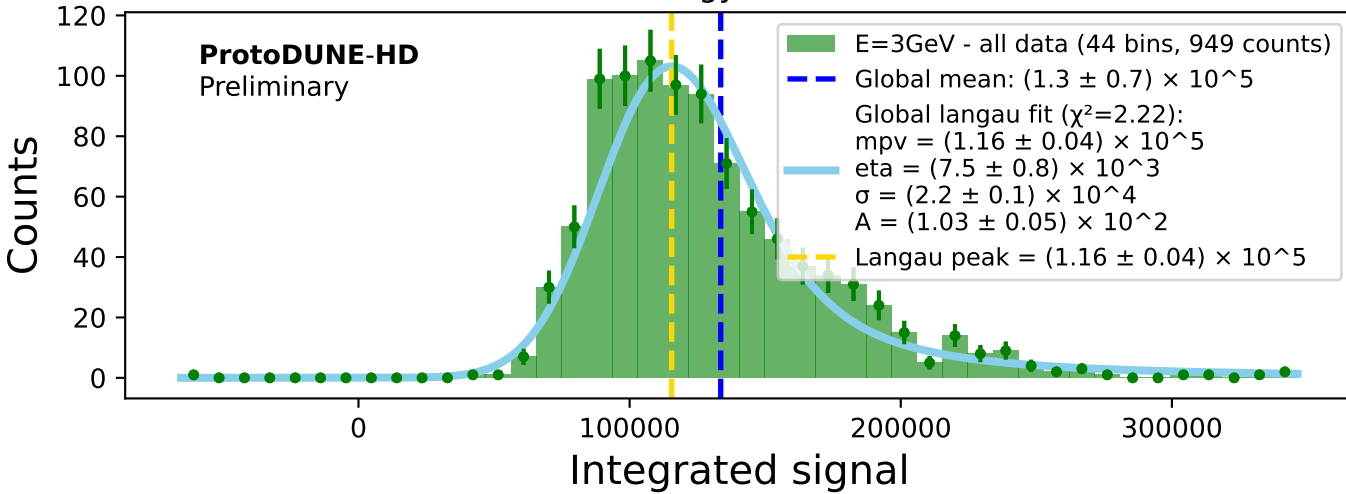
Energy: 1 GeV



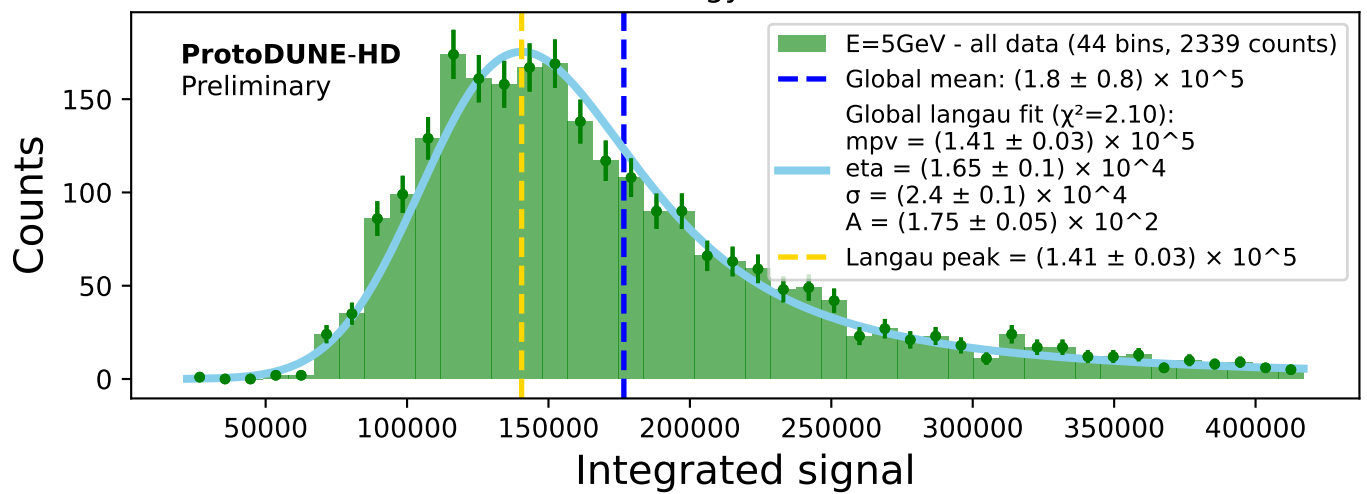
Energy: 2 GeV



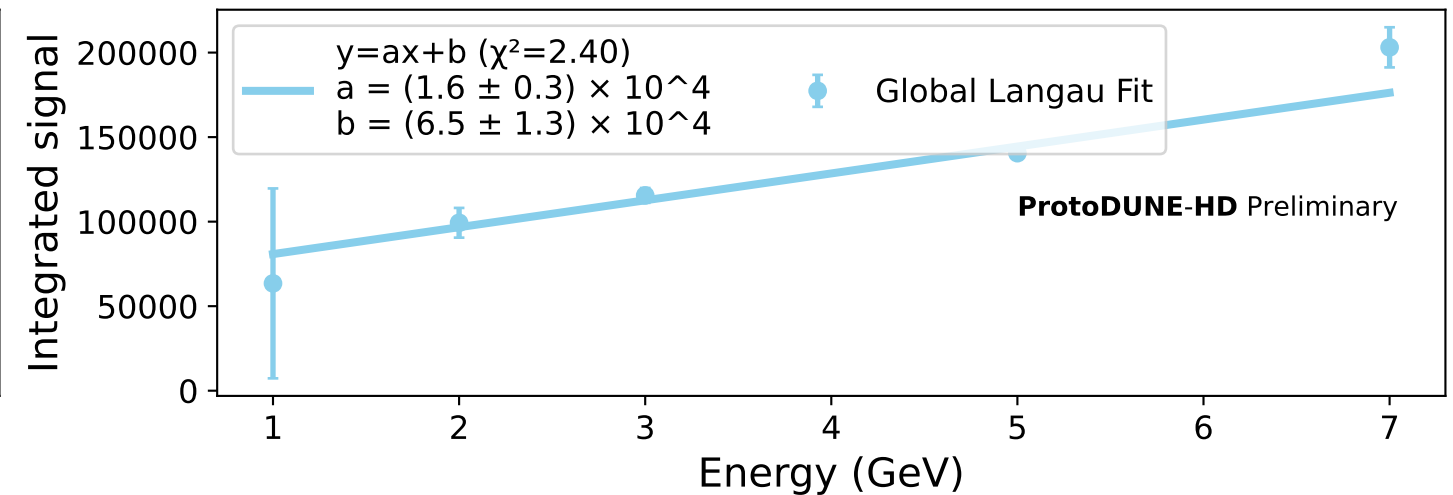
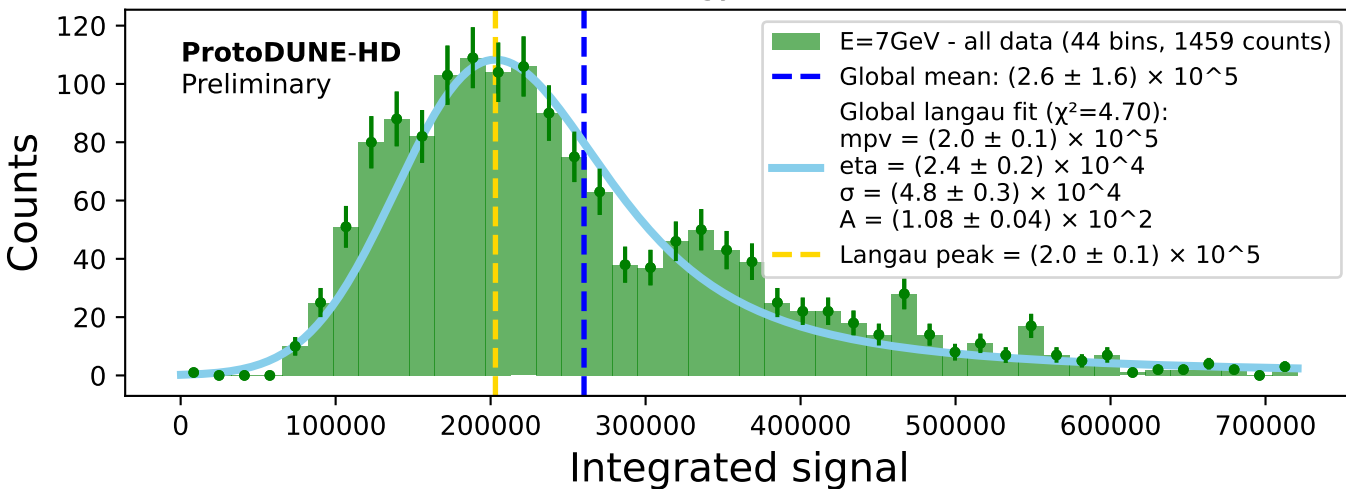
Energy: 3 GeV



Energy: 5 GeV

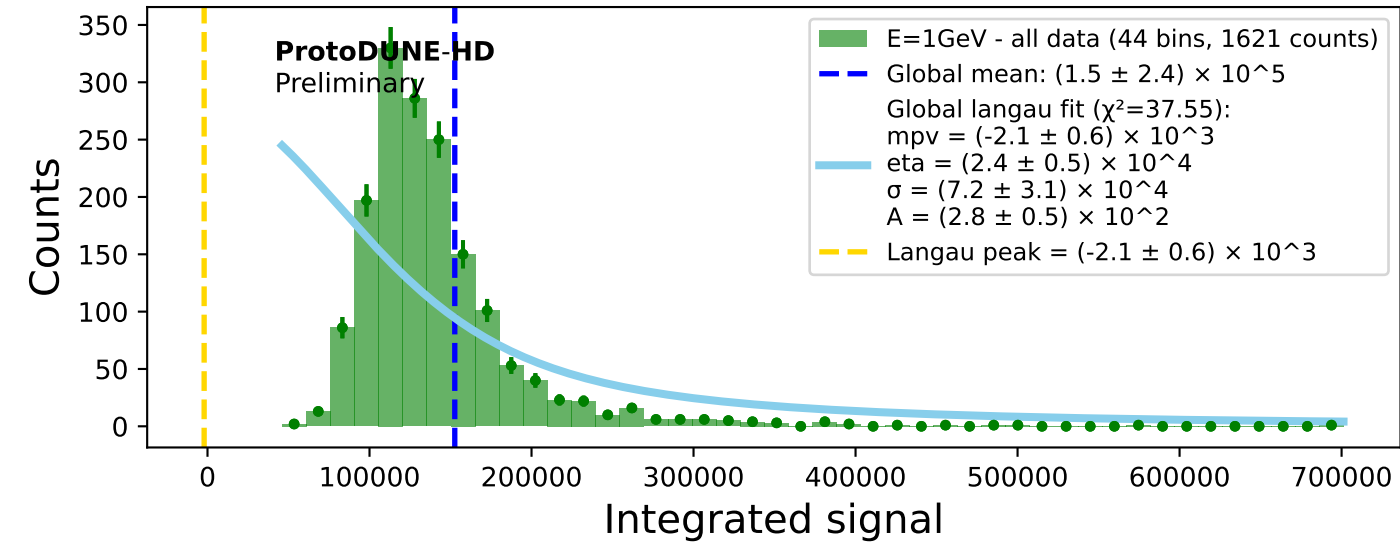


Energy: 7 GeV

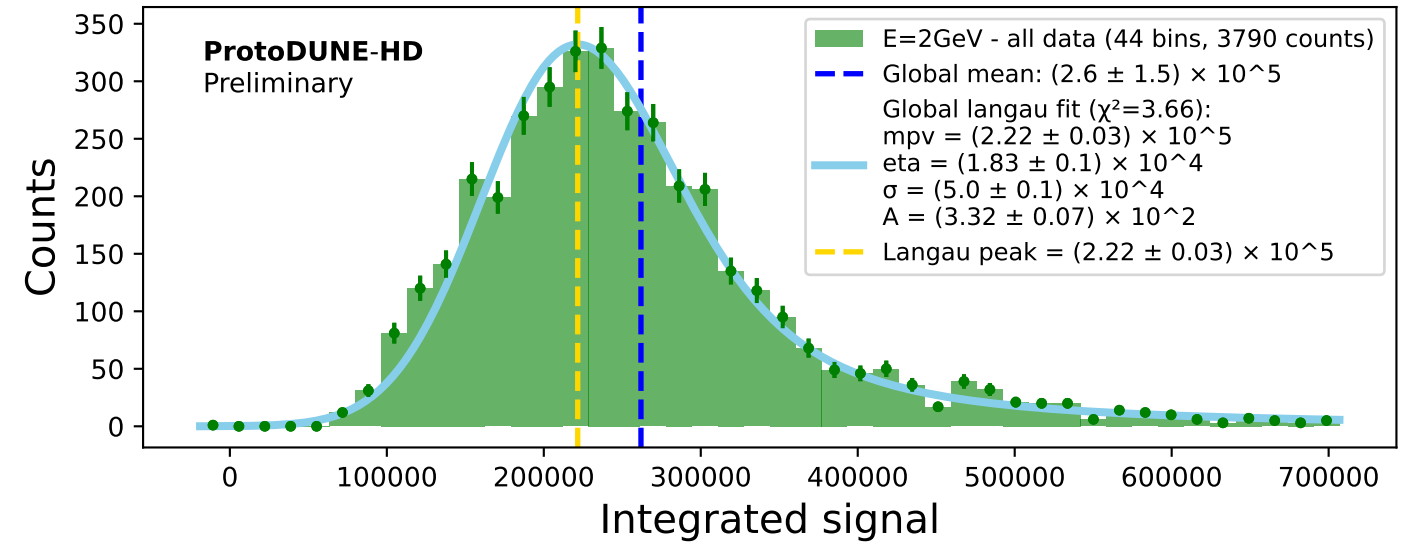


# Endpoint 109 - Channel 21 : Integral Before Analysis - 44 bins

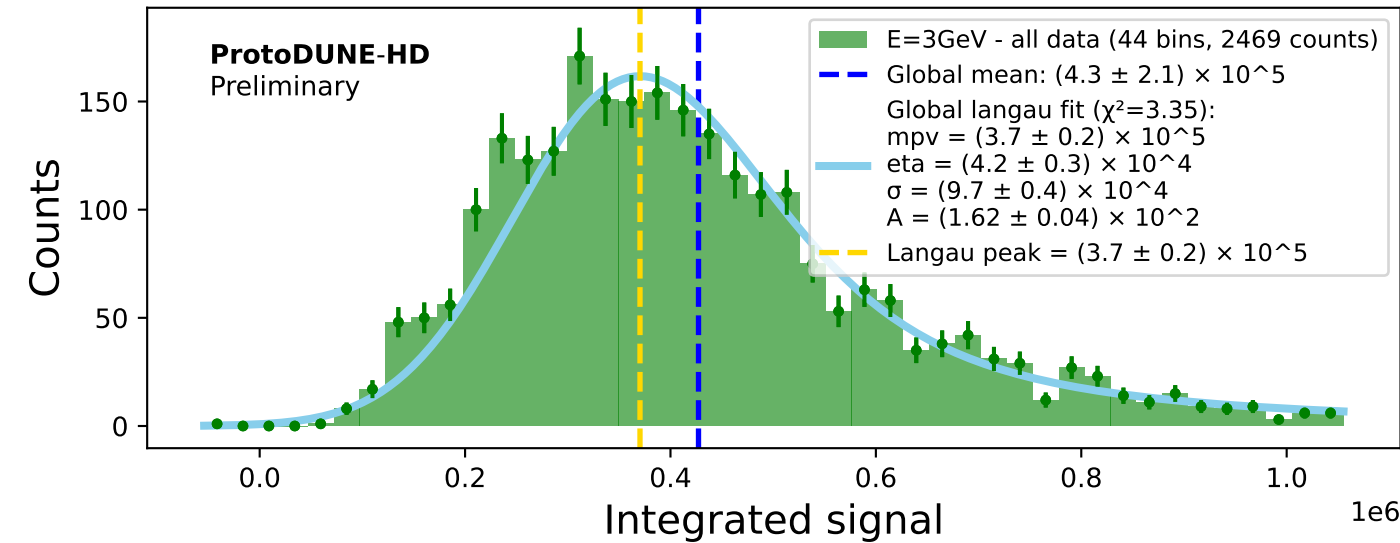
Energy: 1 GeV



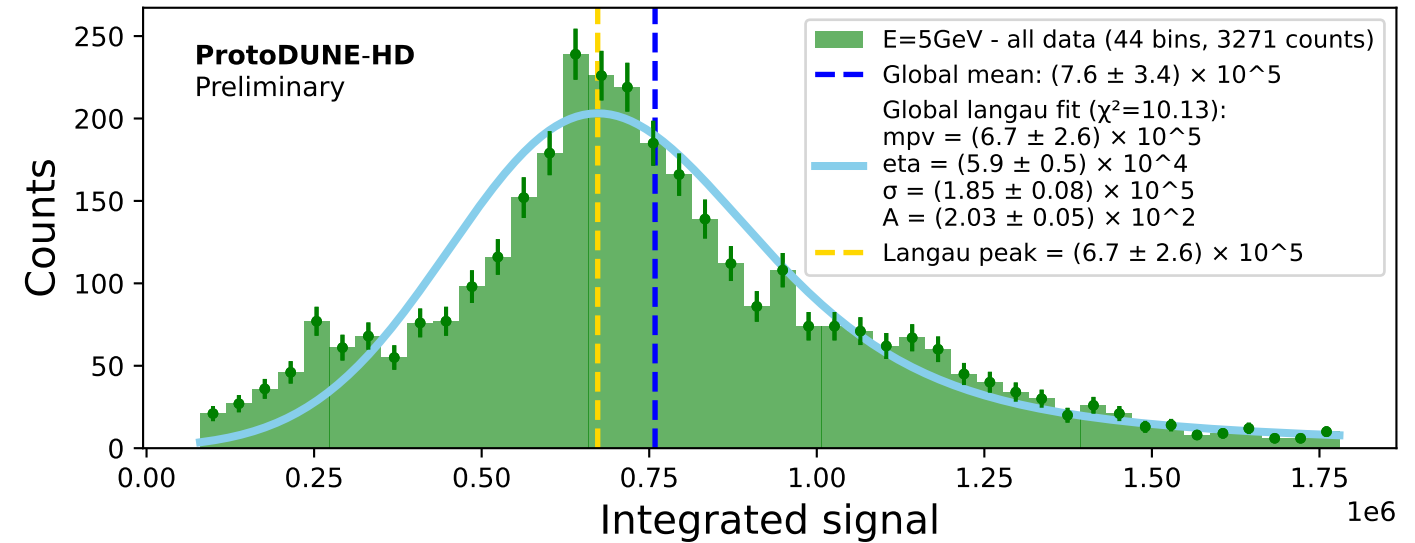
Energy: 2 GeV



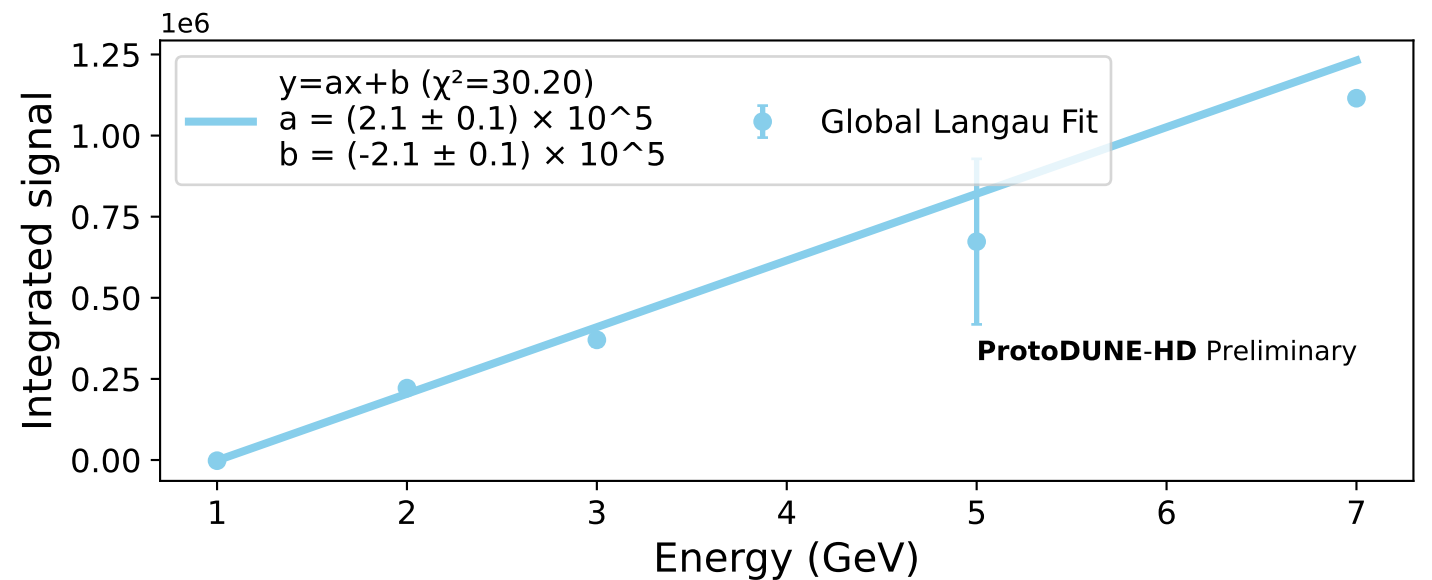
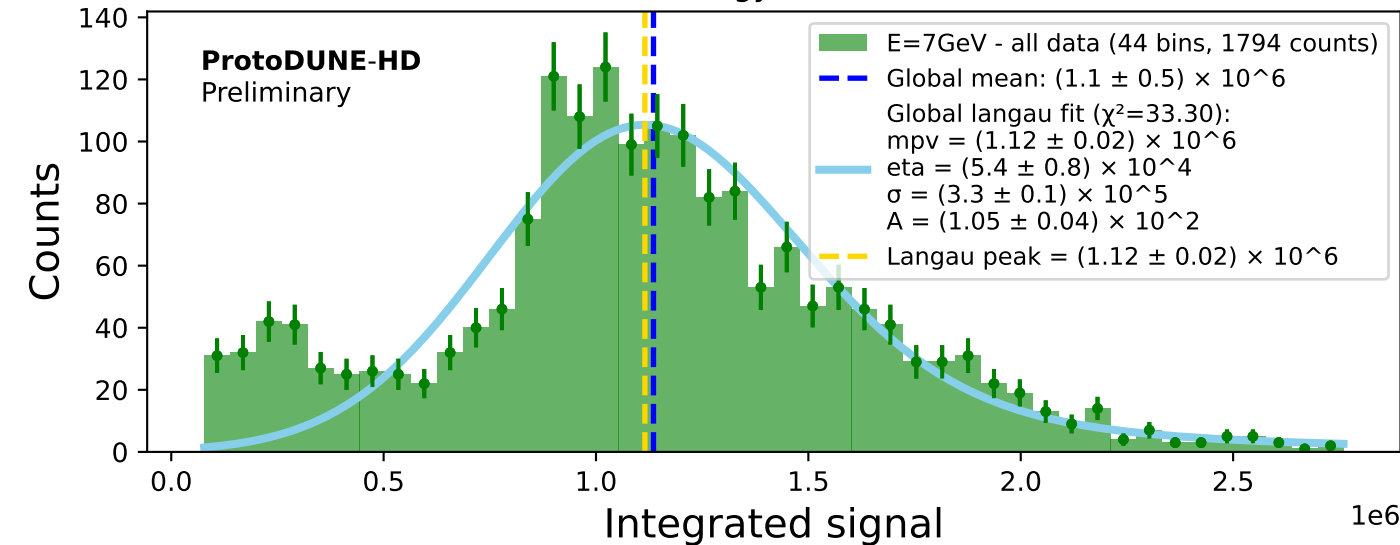
Energy: 3 GeV



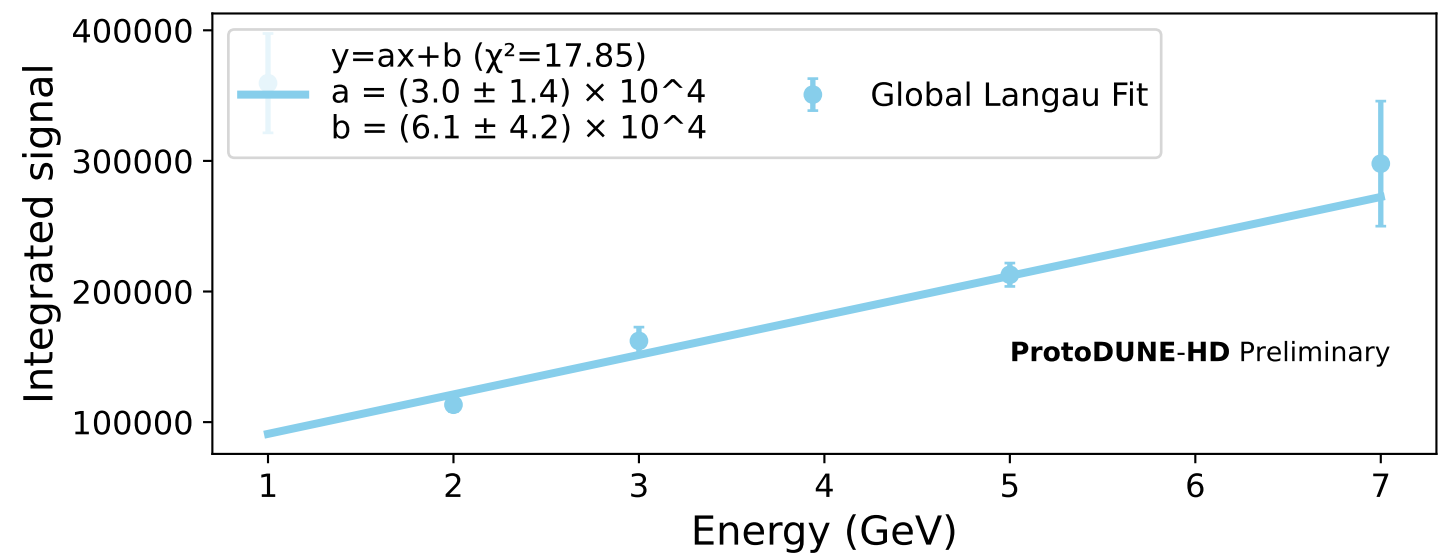
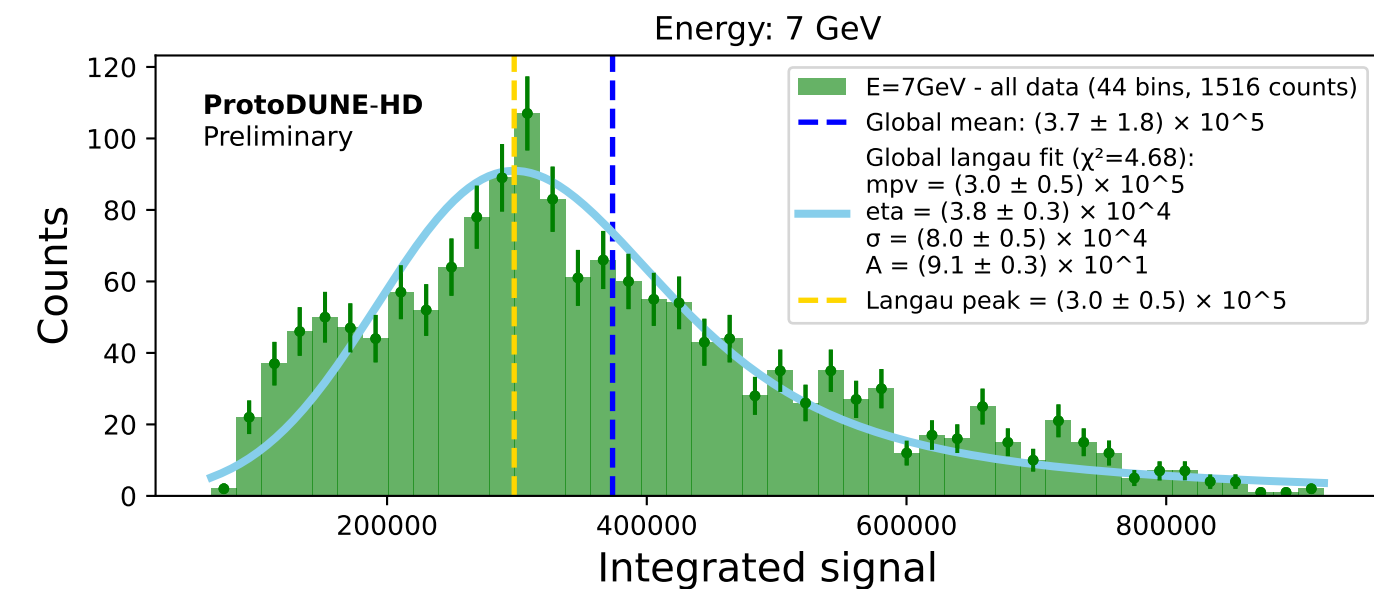
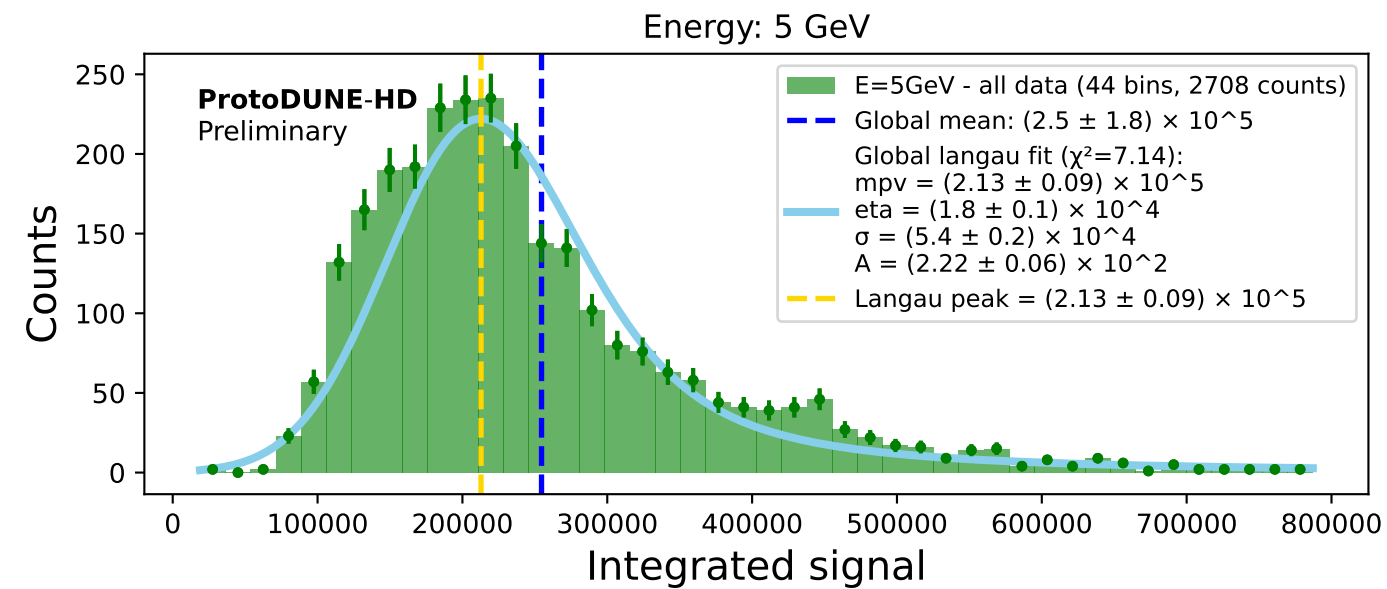
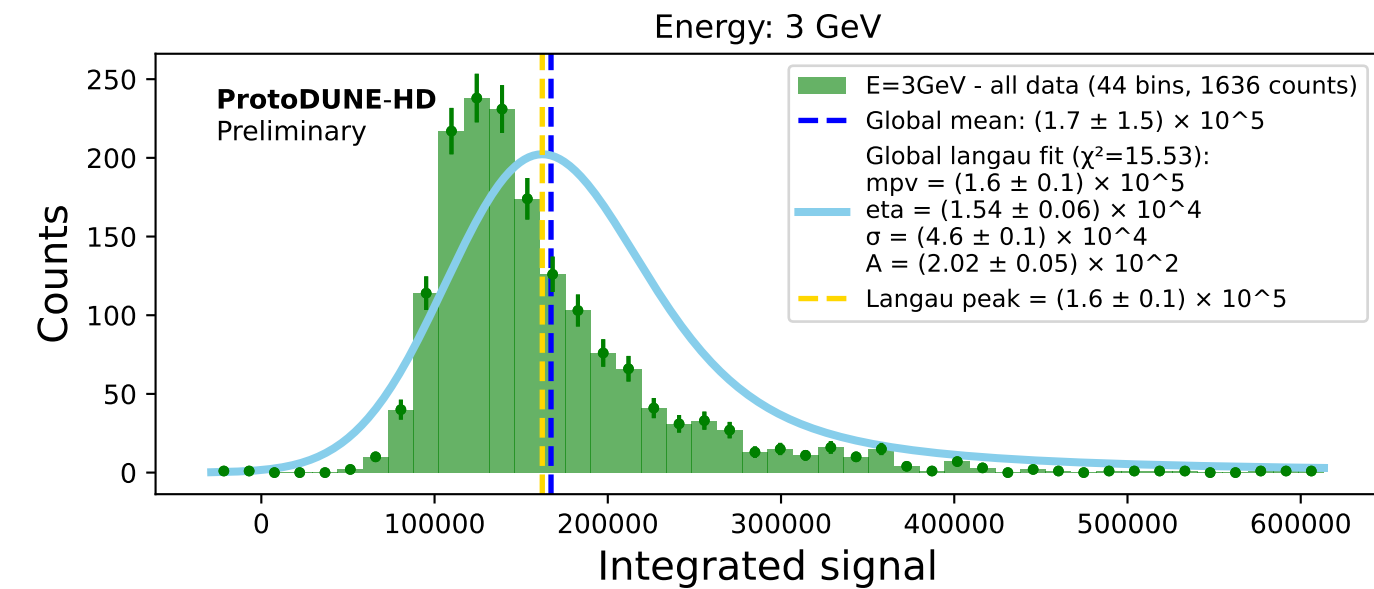
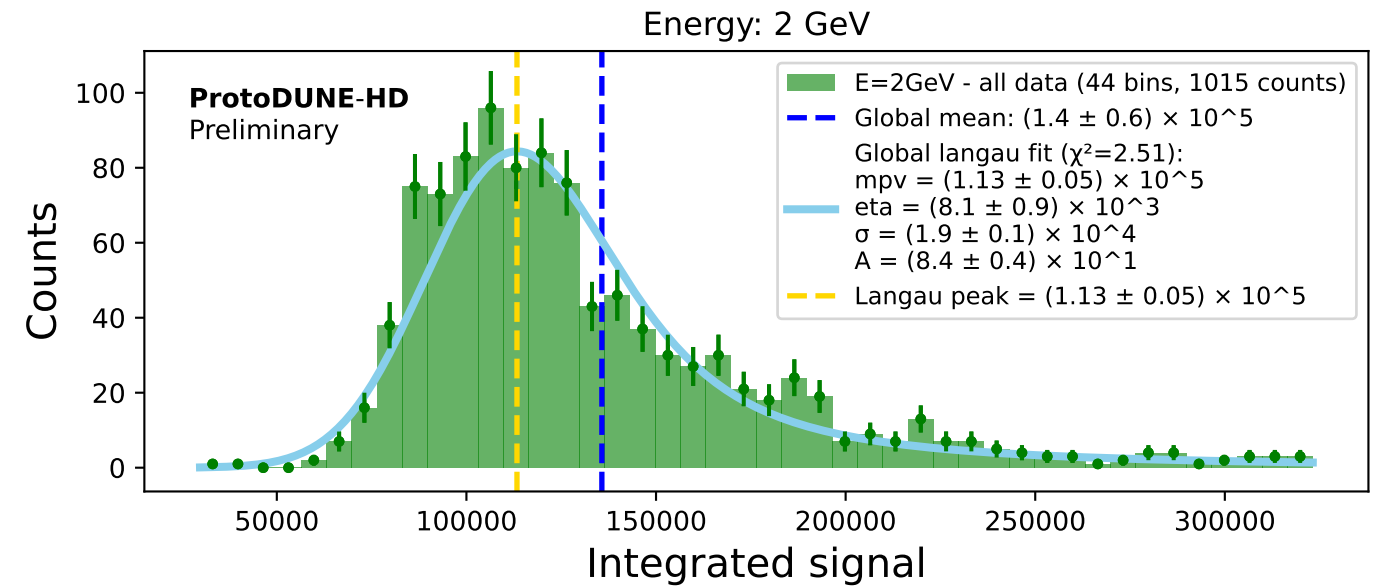
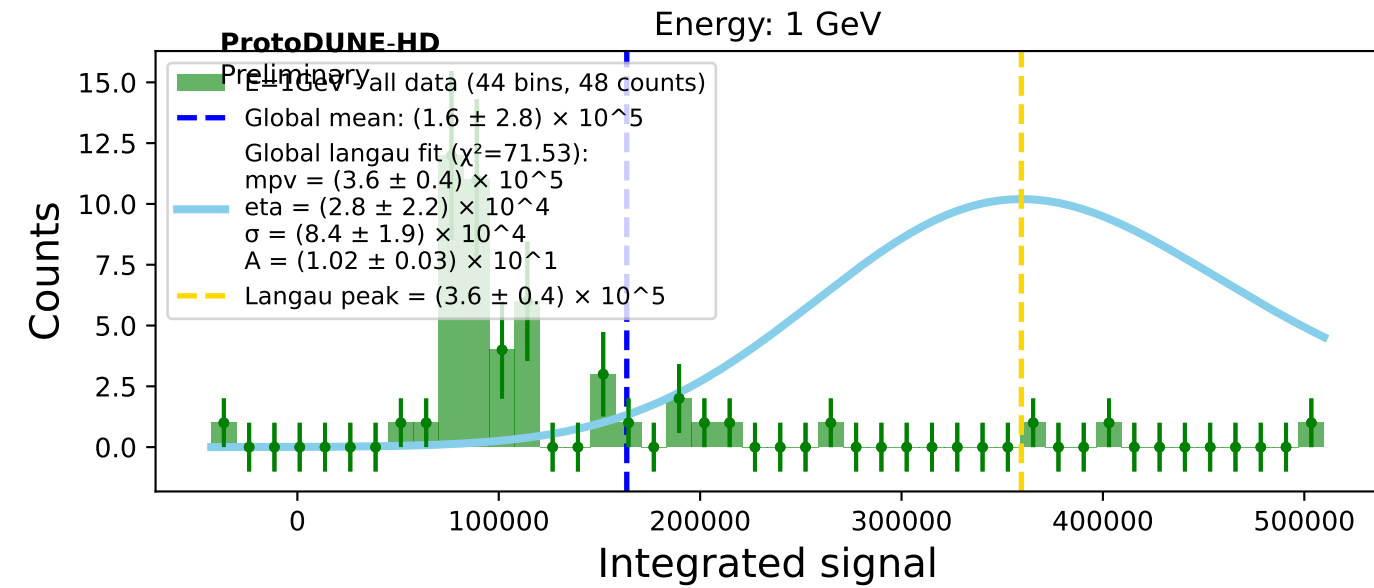
Energy: 5 GeV



Energy: 7 GeV



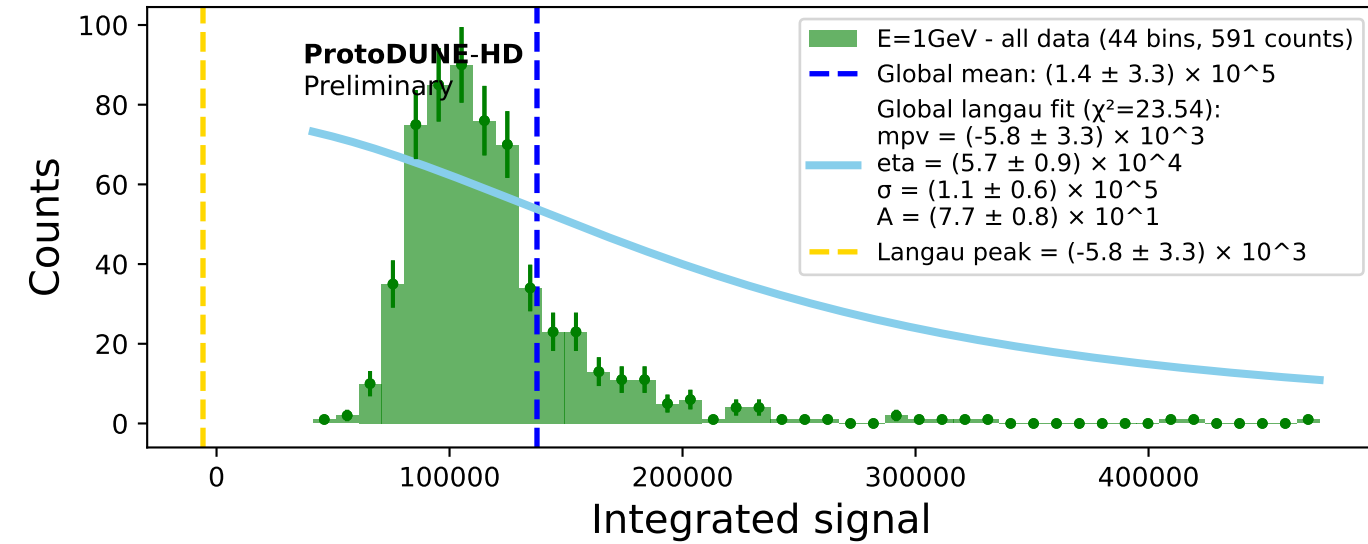
# Endpoint 109 - Channel 22 : Integral Before Analysis - 44 bins



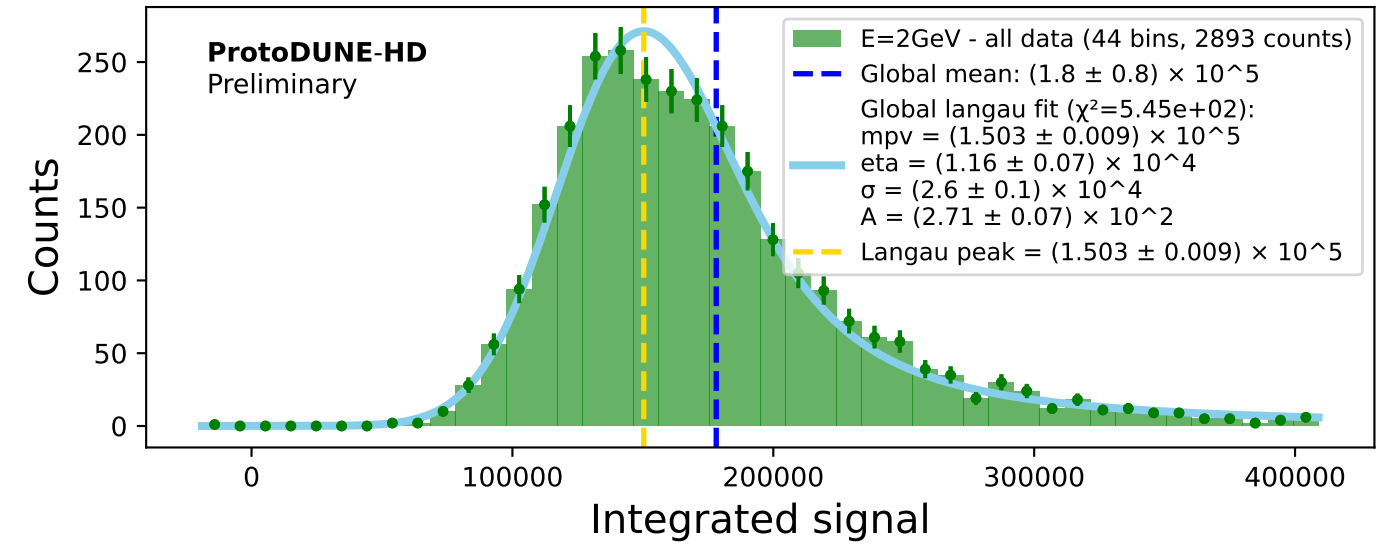


# Endpoint 109 - Channel 23 : Integral Before Analysis - 44 bins

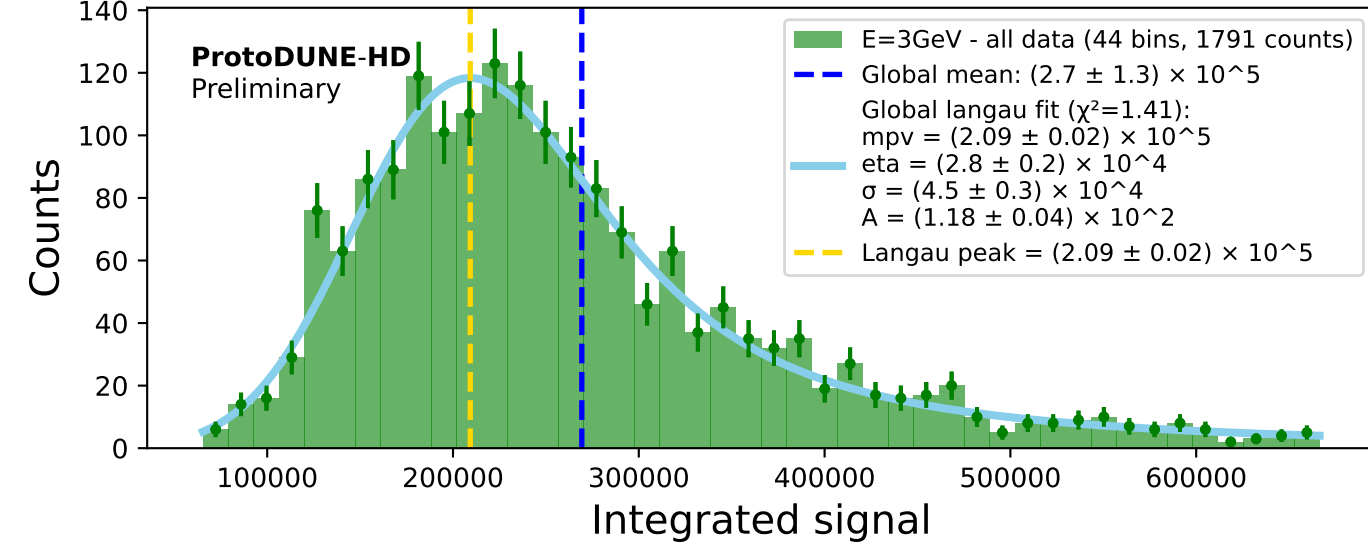
Energy: 1 GeV



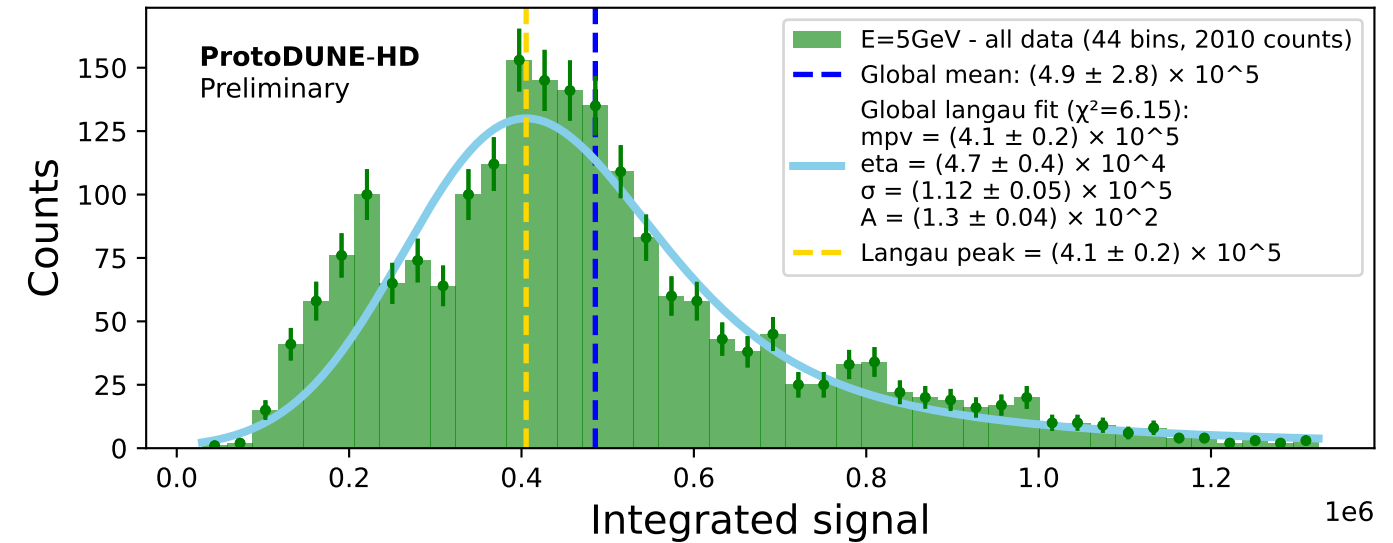
Energy: 2 GeV



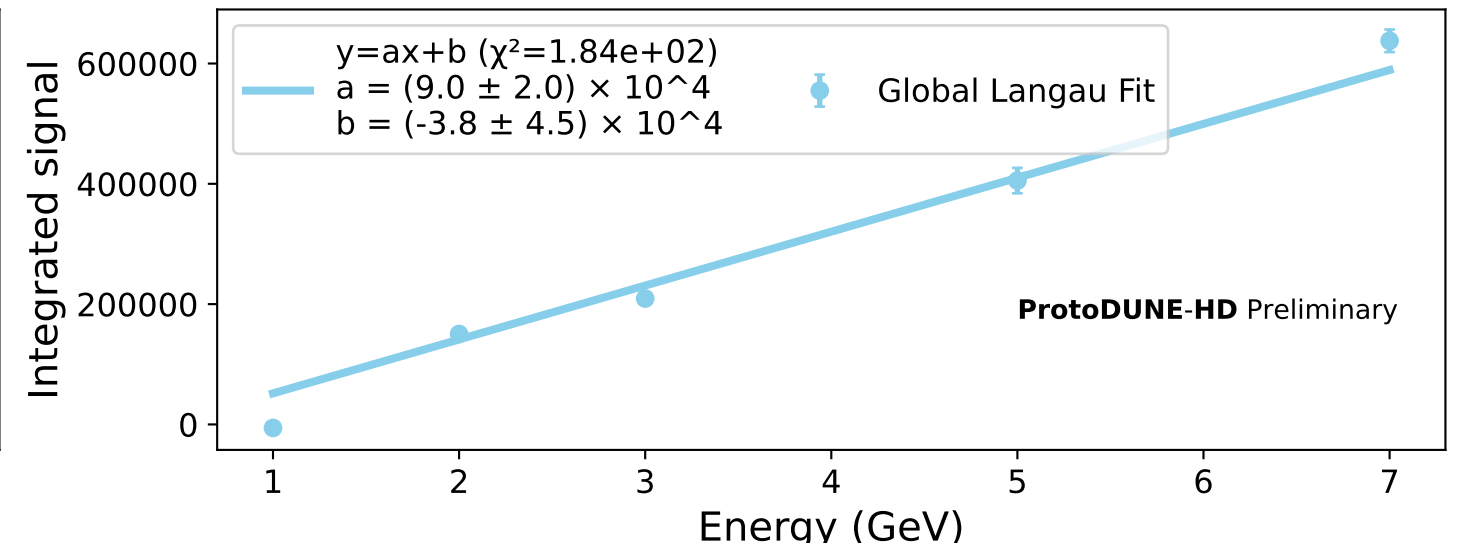
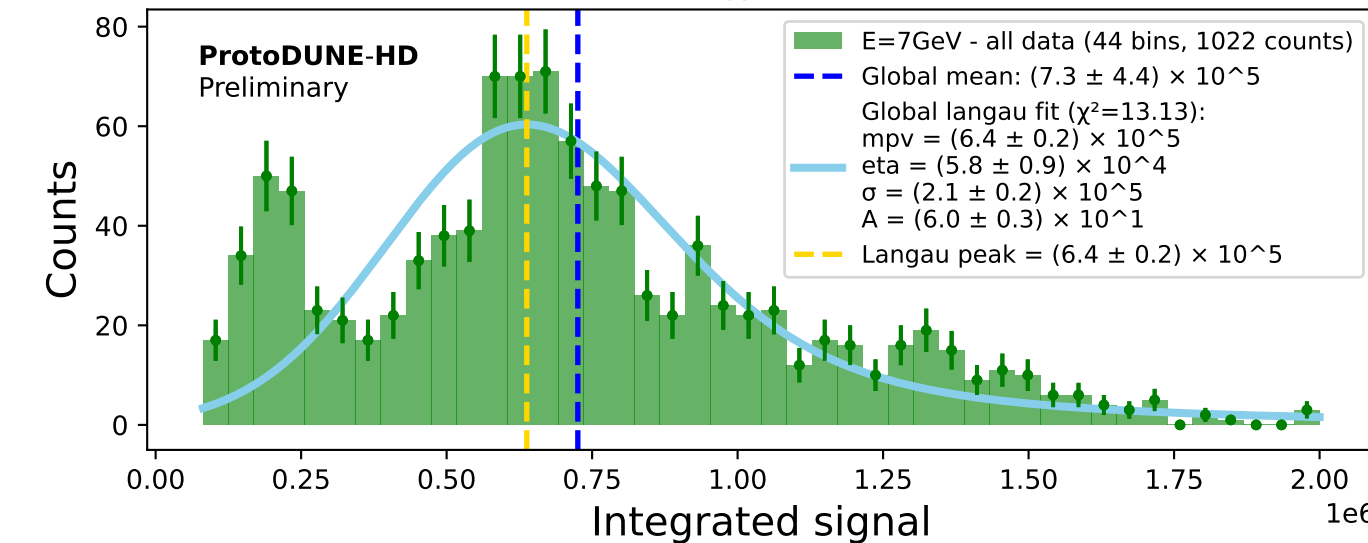
Energy: 3 GeV



Energy: 5 GeV

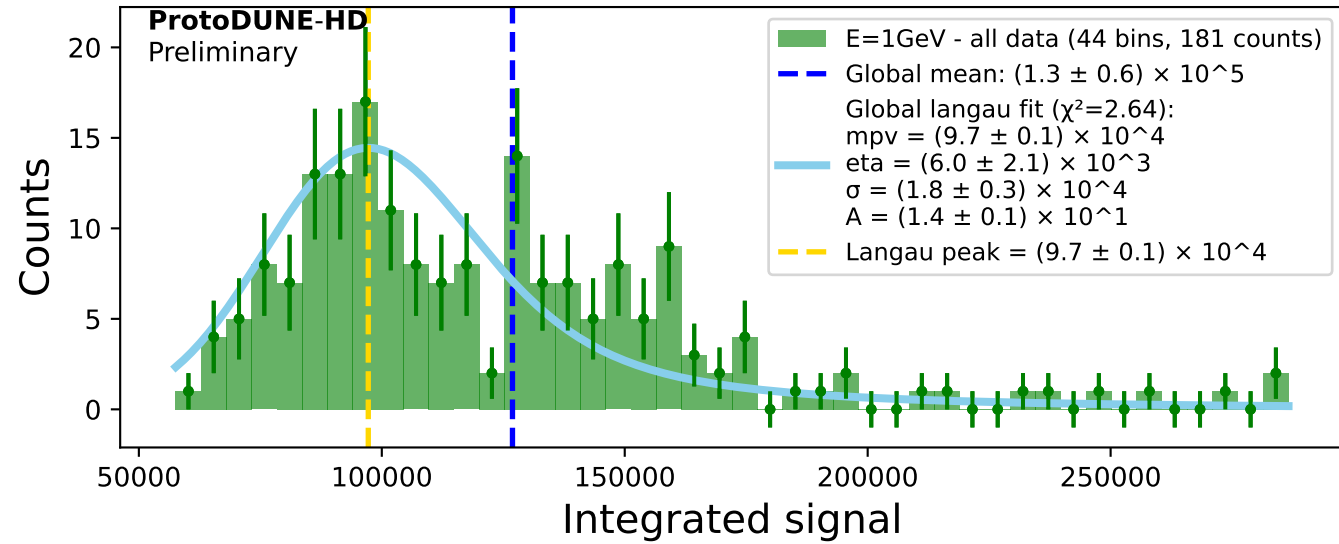


Energy: 7 GeV

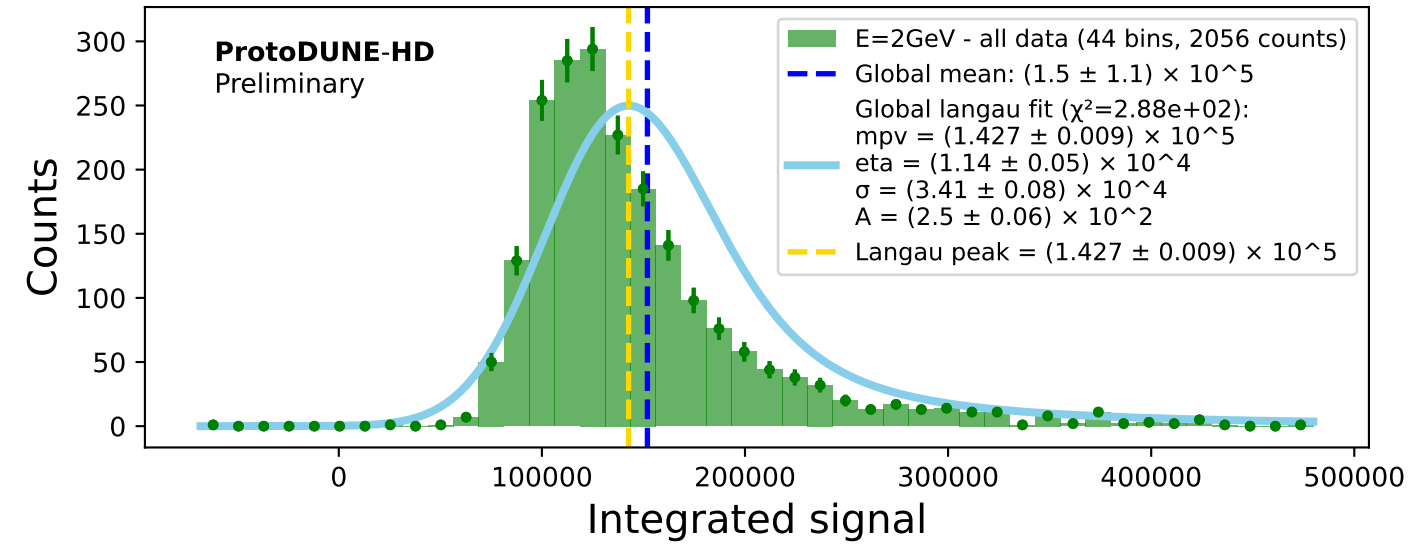


# Endpoint 109 - Channel 24 : Integral Before Analysis - 44 bins

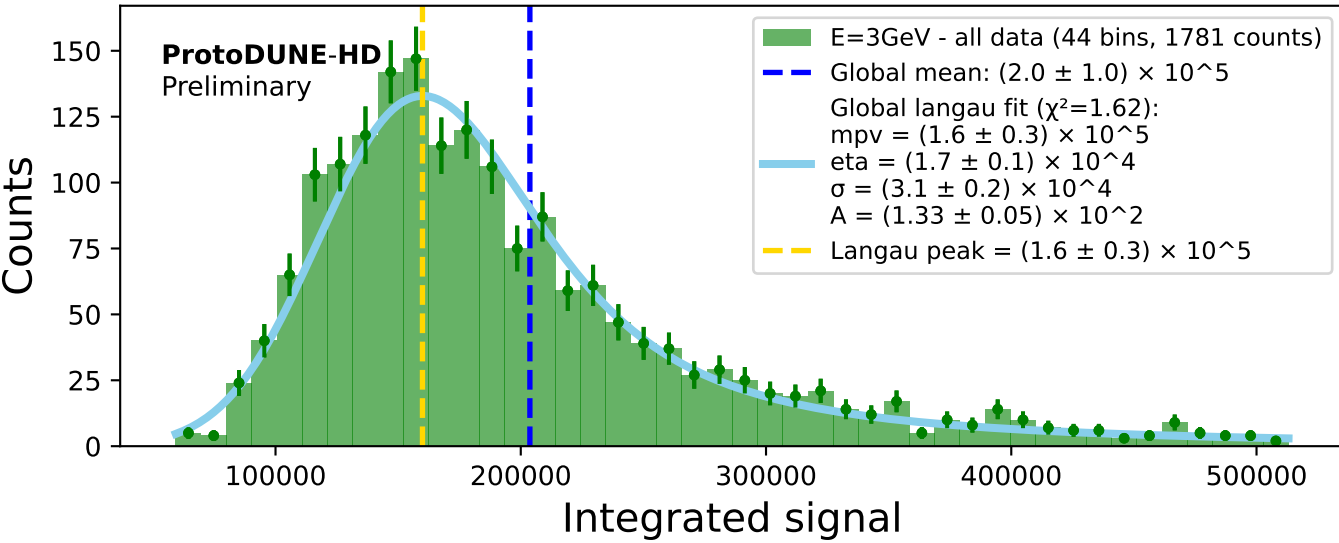
Energy: 1 GeV



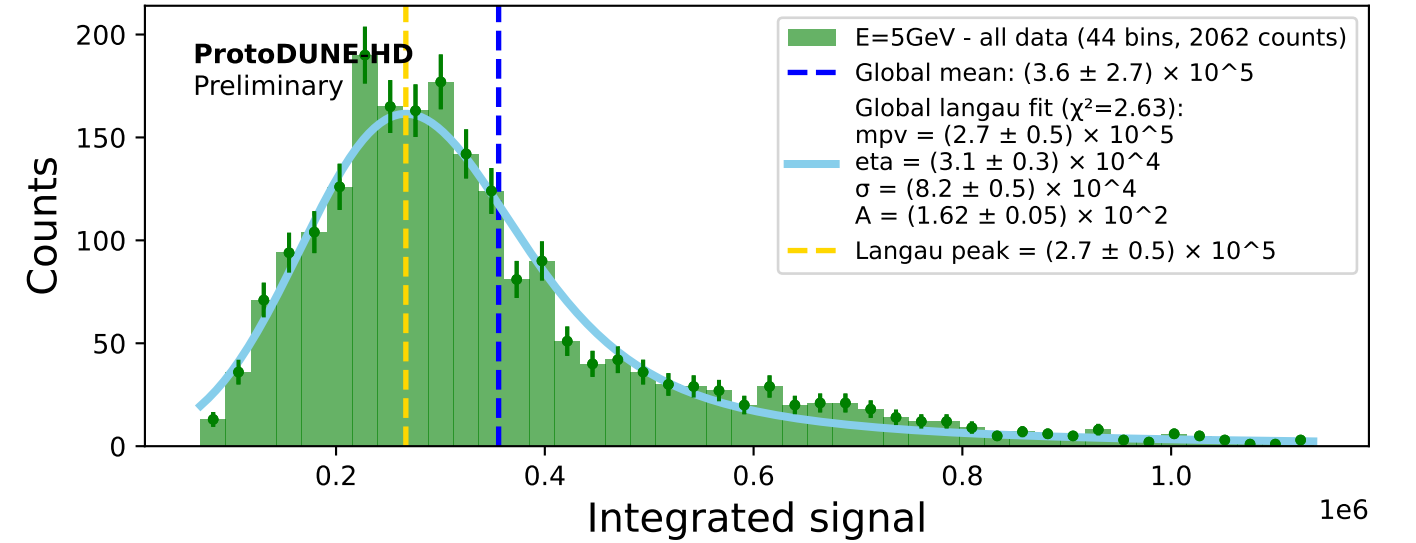
Energy: 2 GeV



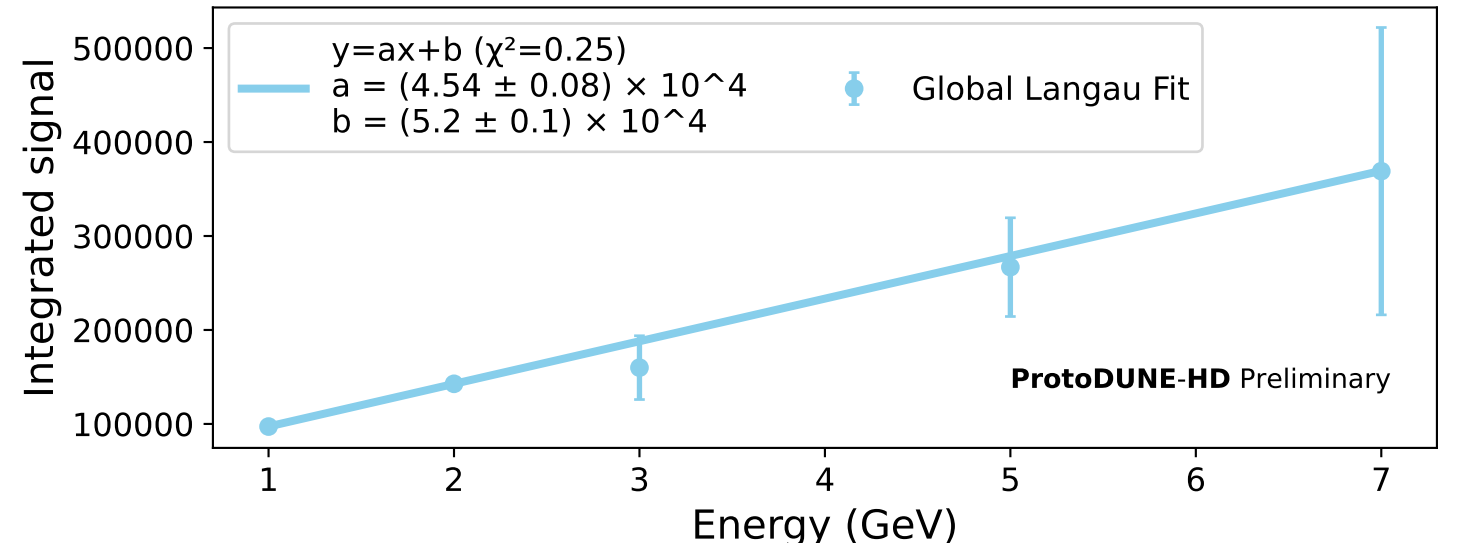
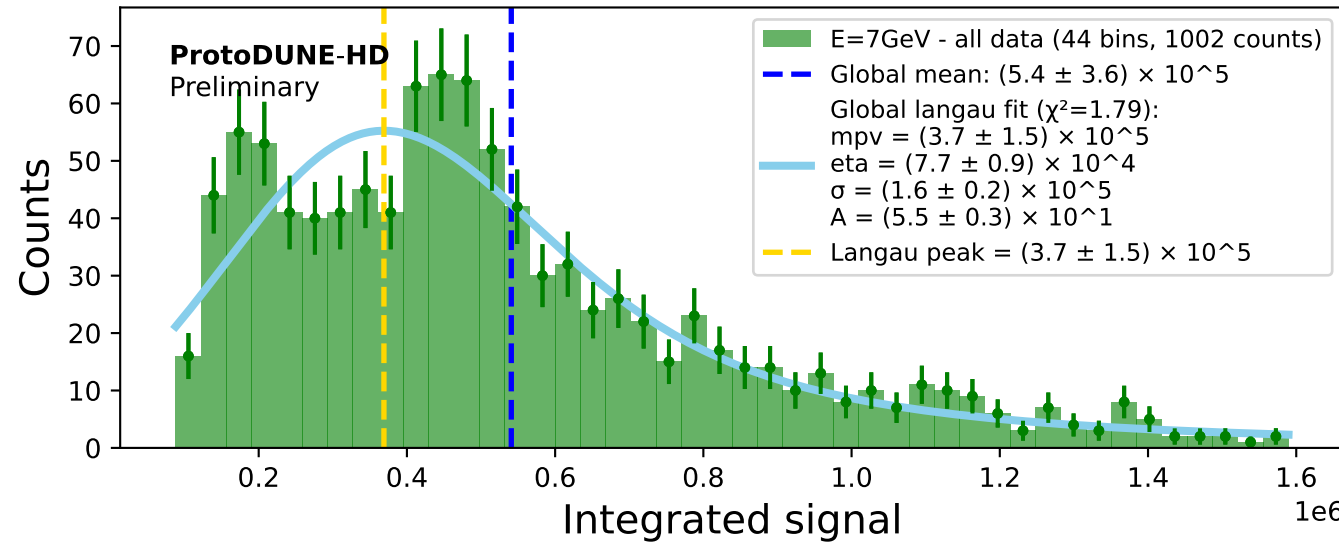
Energy: 3 GeV



Energy: 5 GeV



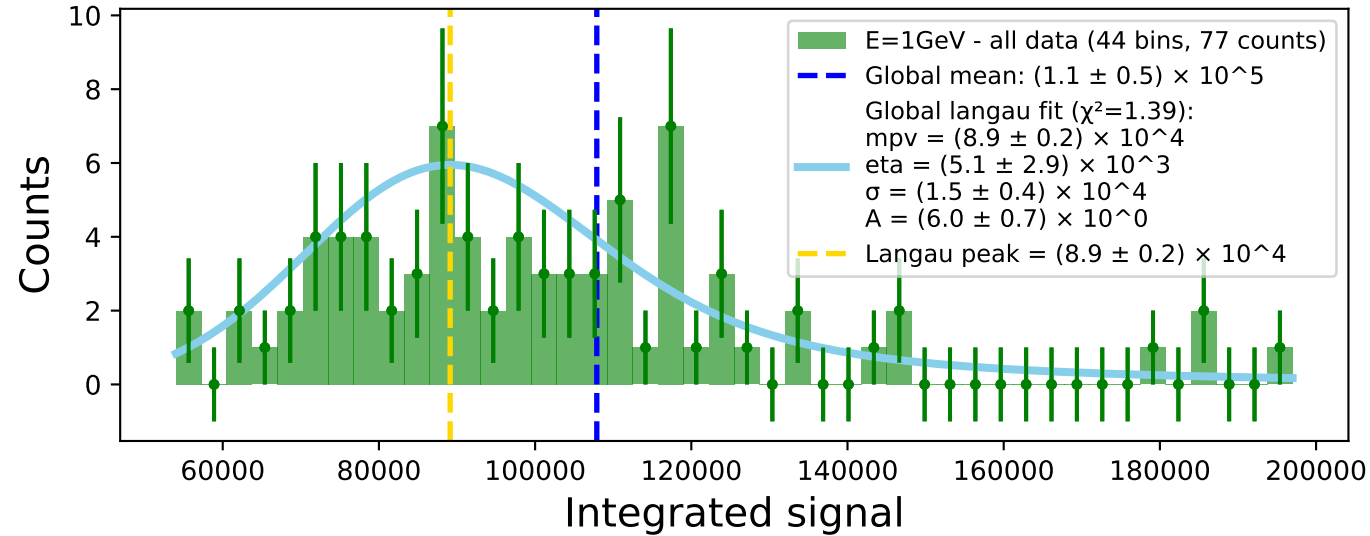
Energy: 7 GeV



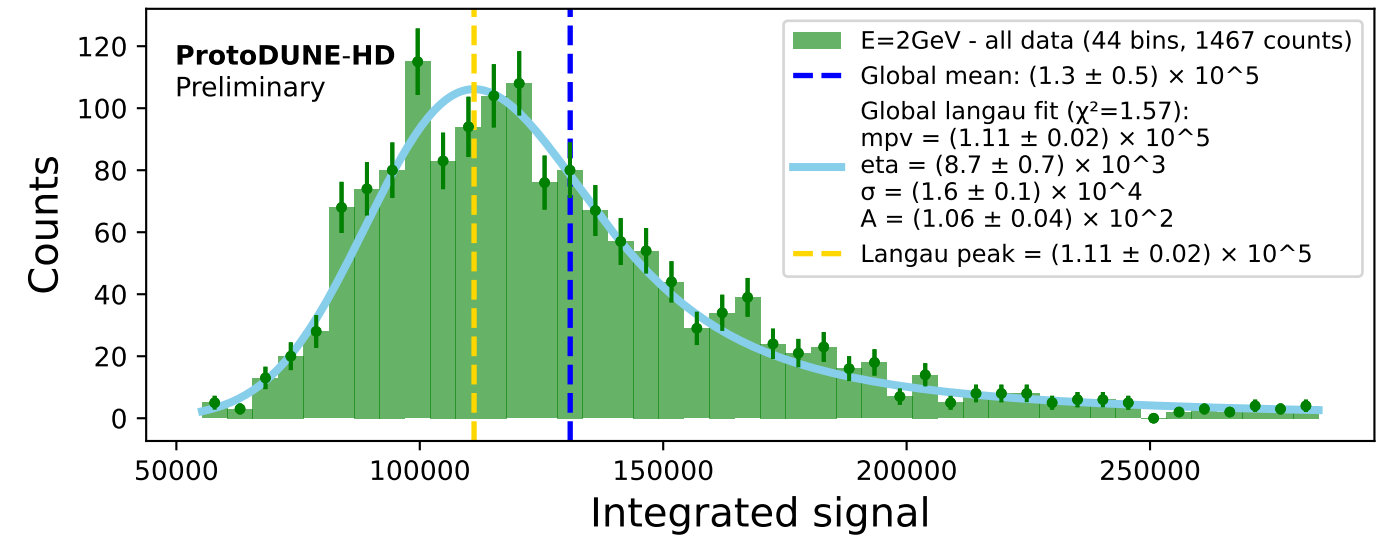
# Endpoint 109 - Channel 25 : Integral Before Analysis - 44 bins

**ProtoDUNE-HD**  
Preliminary

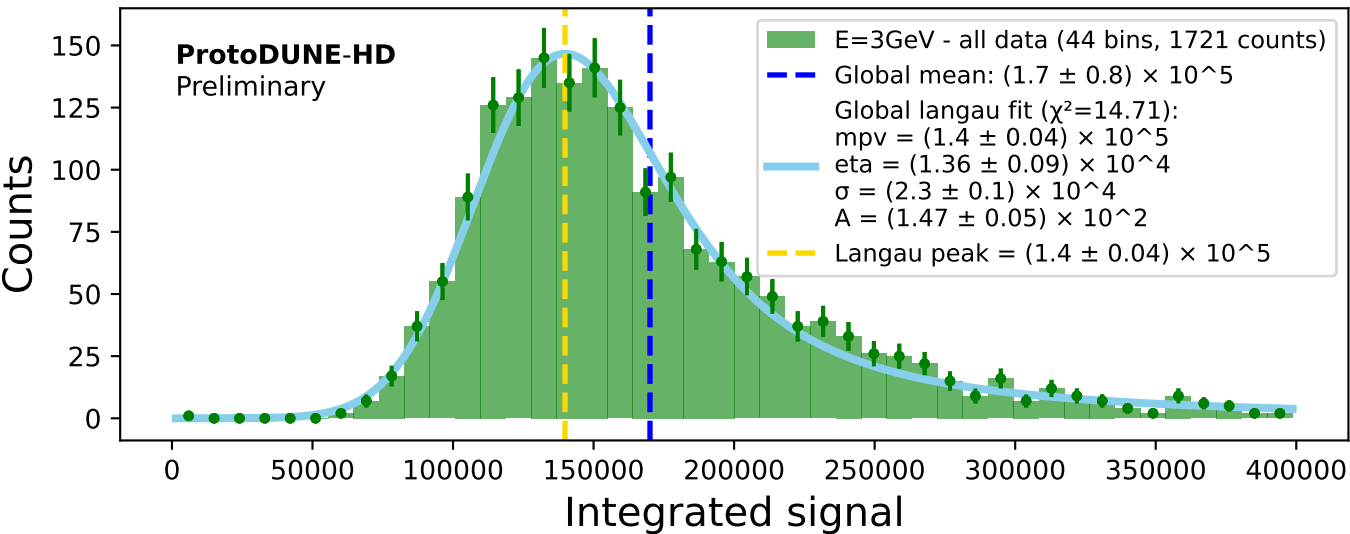
Energy: 1 GeV



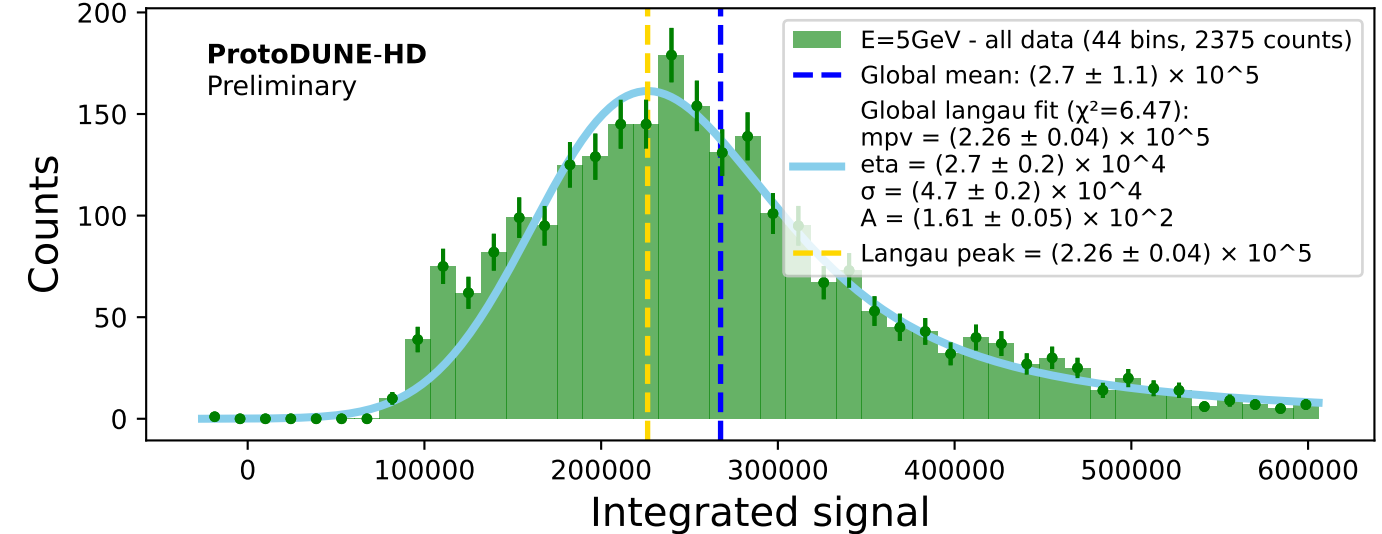
Energy: 2 GeV



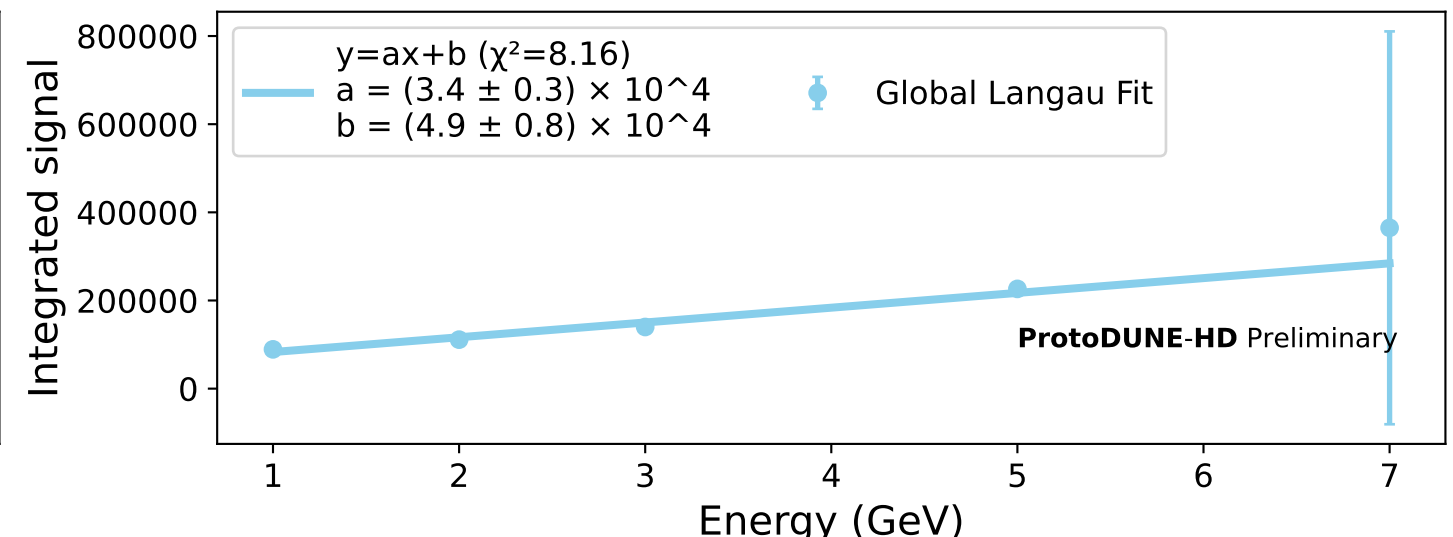
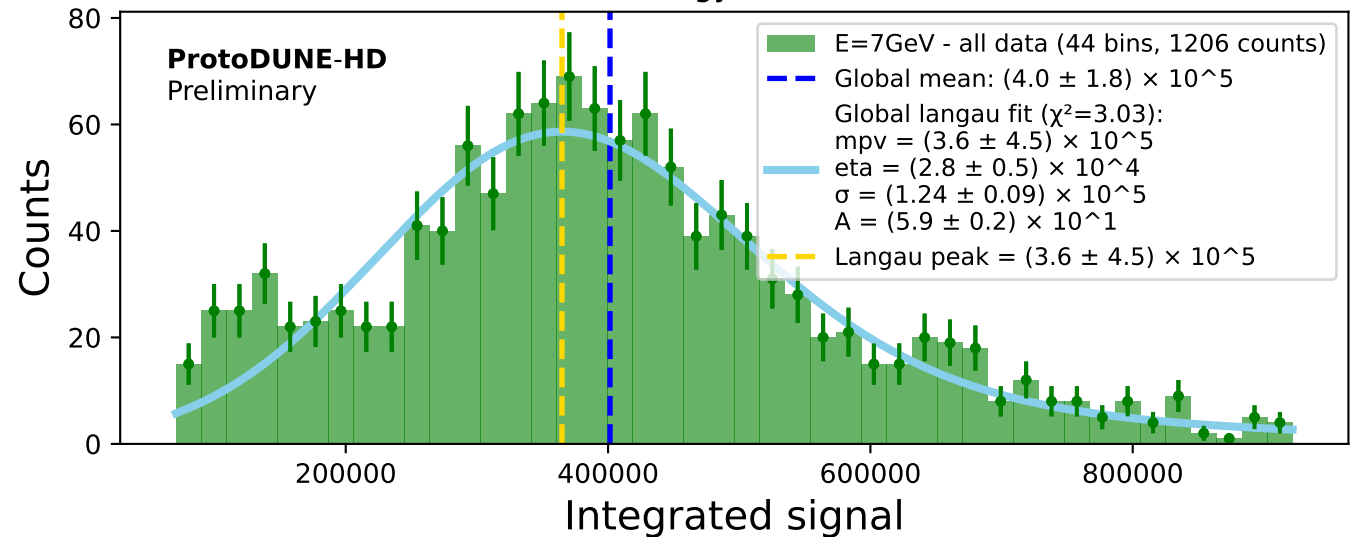
Energy: 3 GeV



Energy: 5 GeV



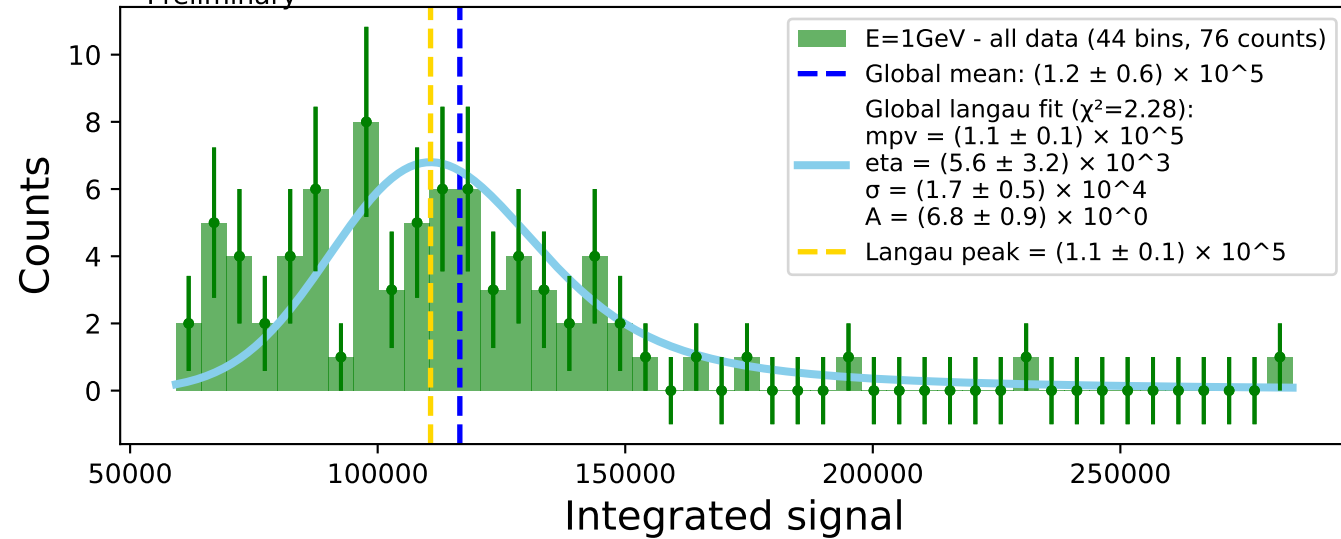
Energy: 7 GeV



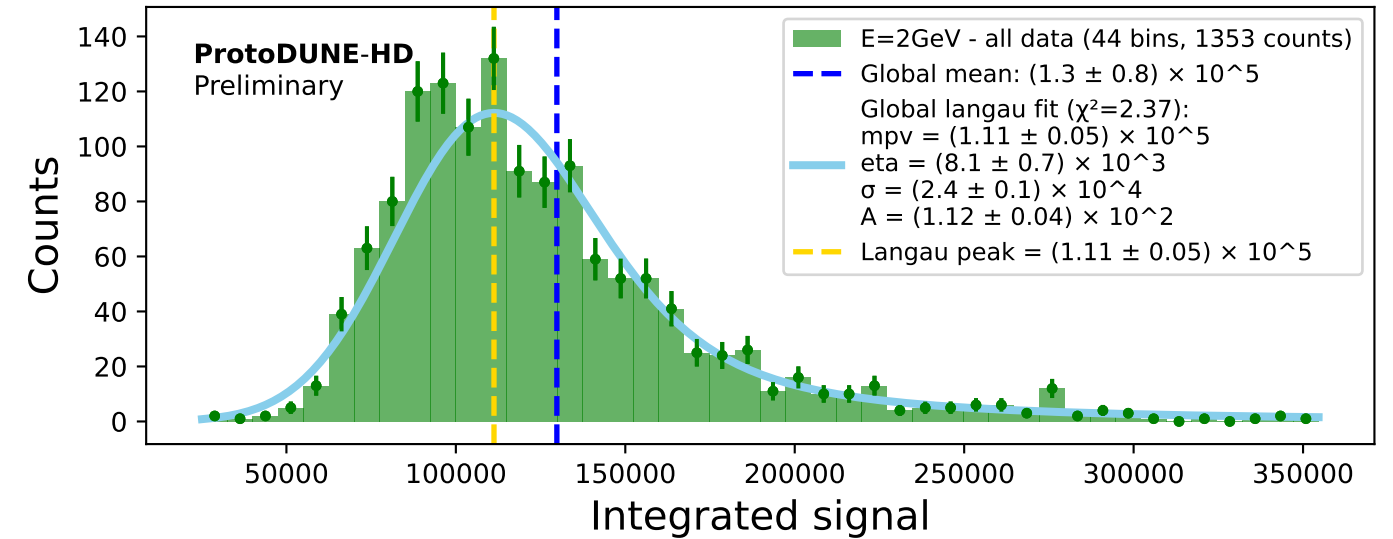
# Endpoint 109 - Channel 26 : Integral Before Analysis - 44 bins

**ProtoDUNE-HD**  
Preliminary

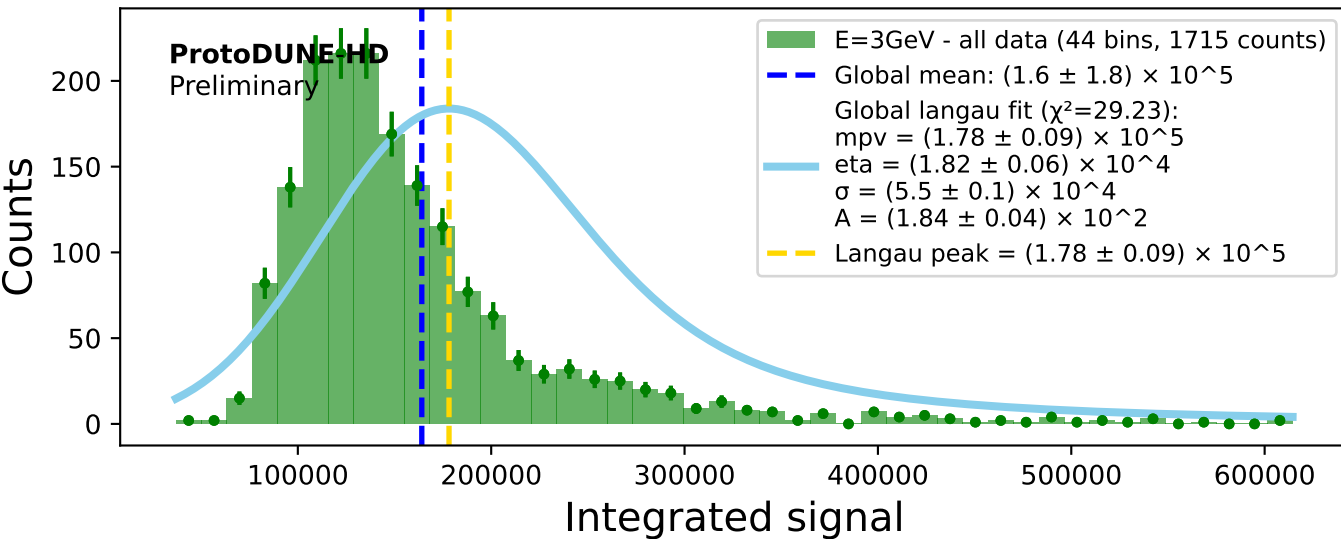
Energy: 1 GeV



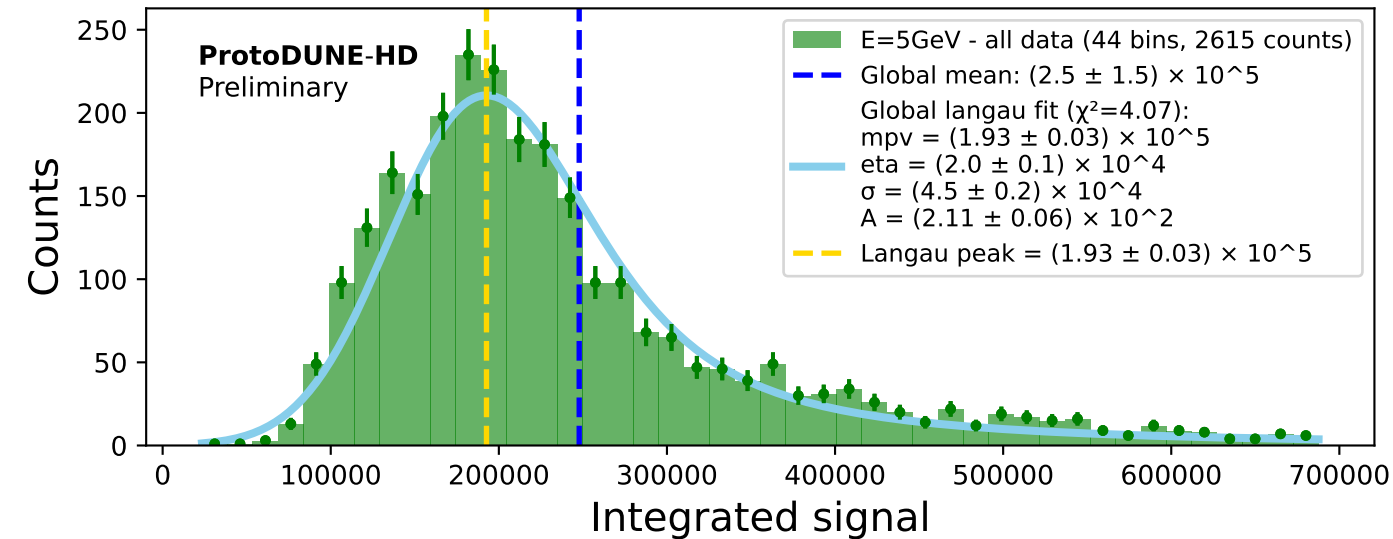
Energy: 2 GeV



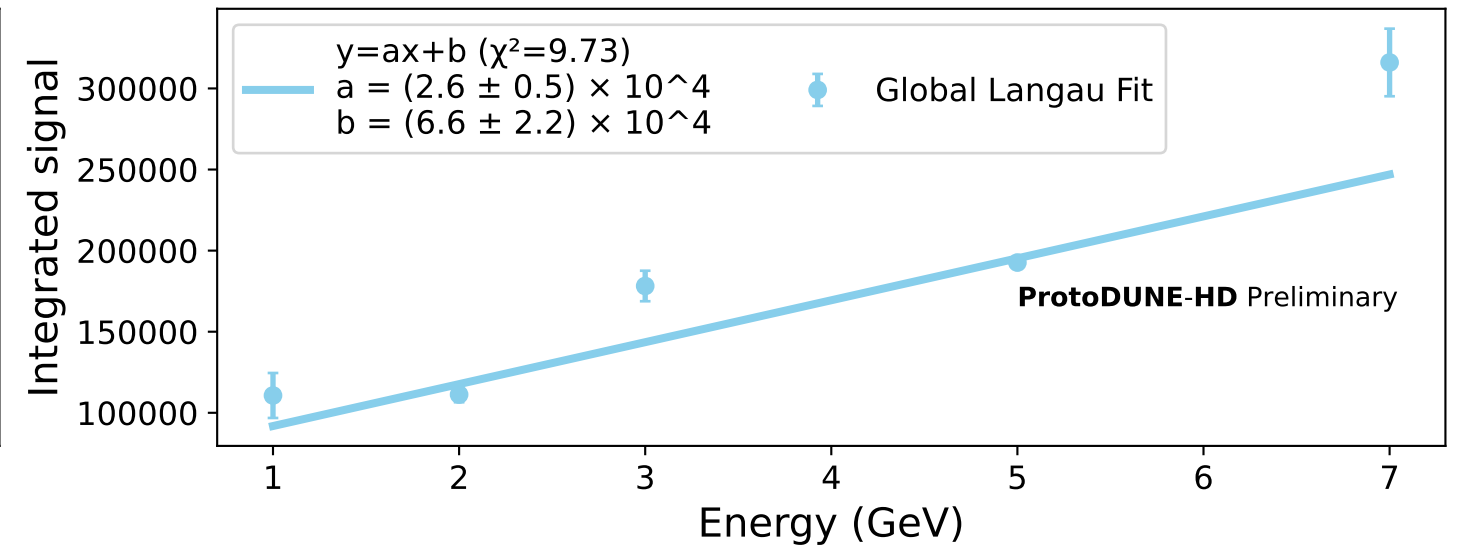
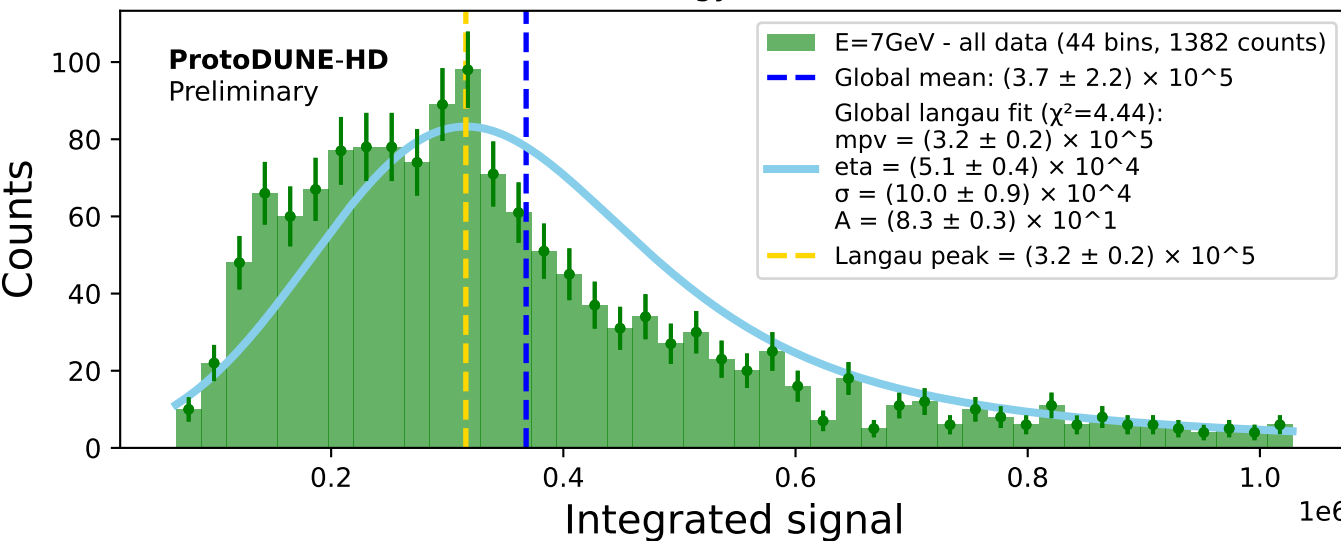
Energy: 3 GeV



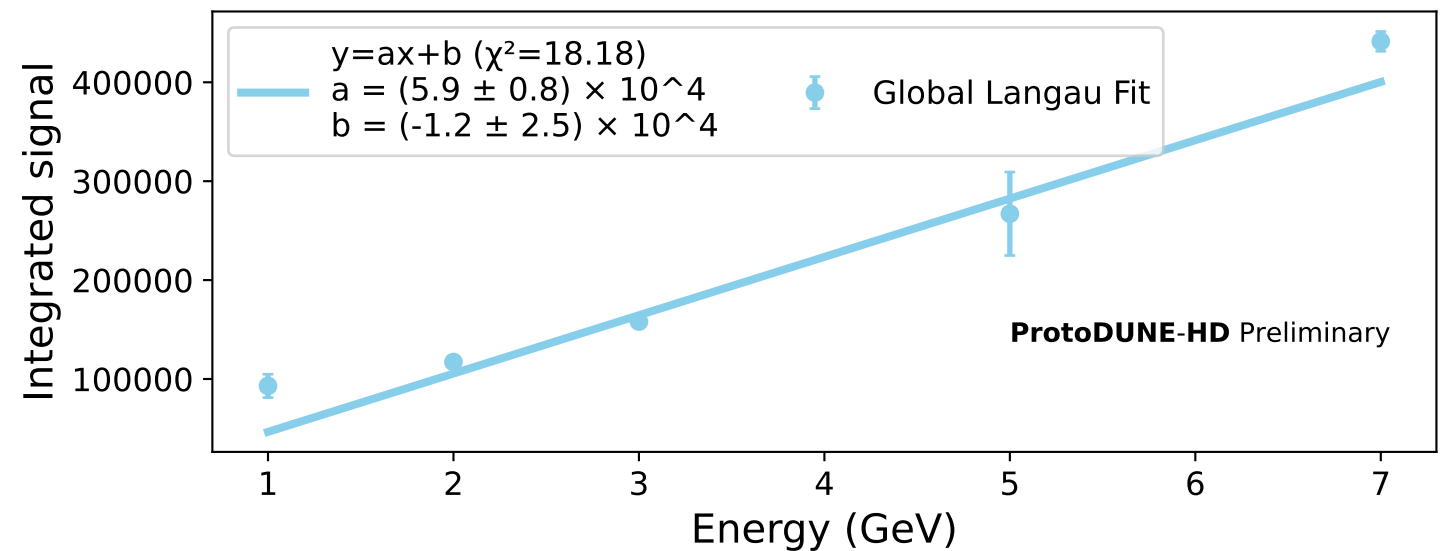
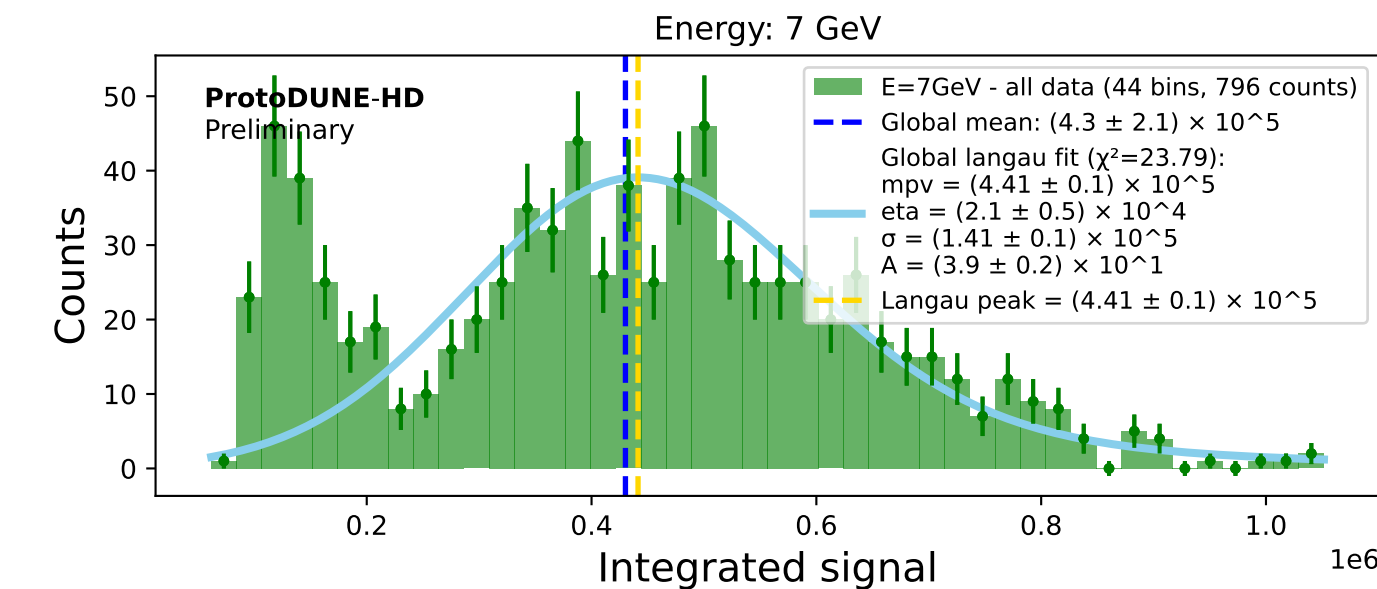
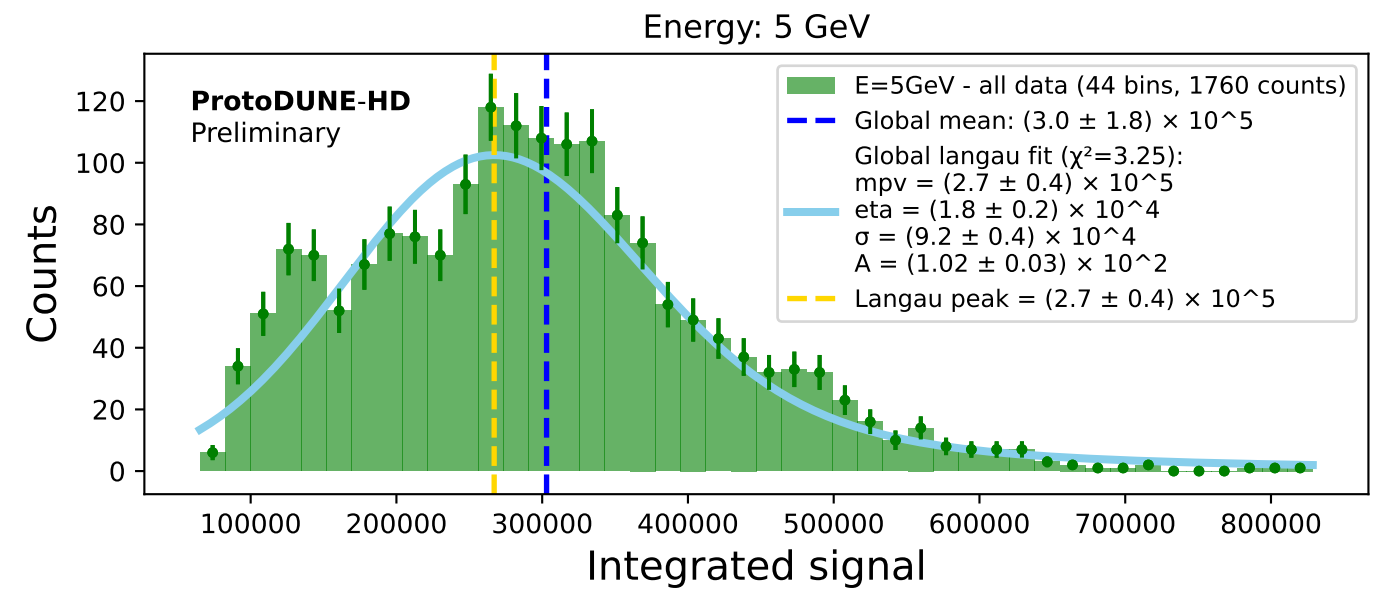
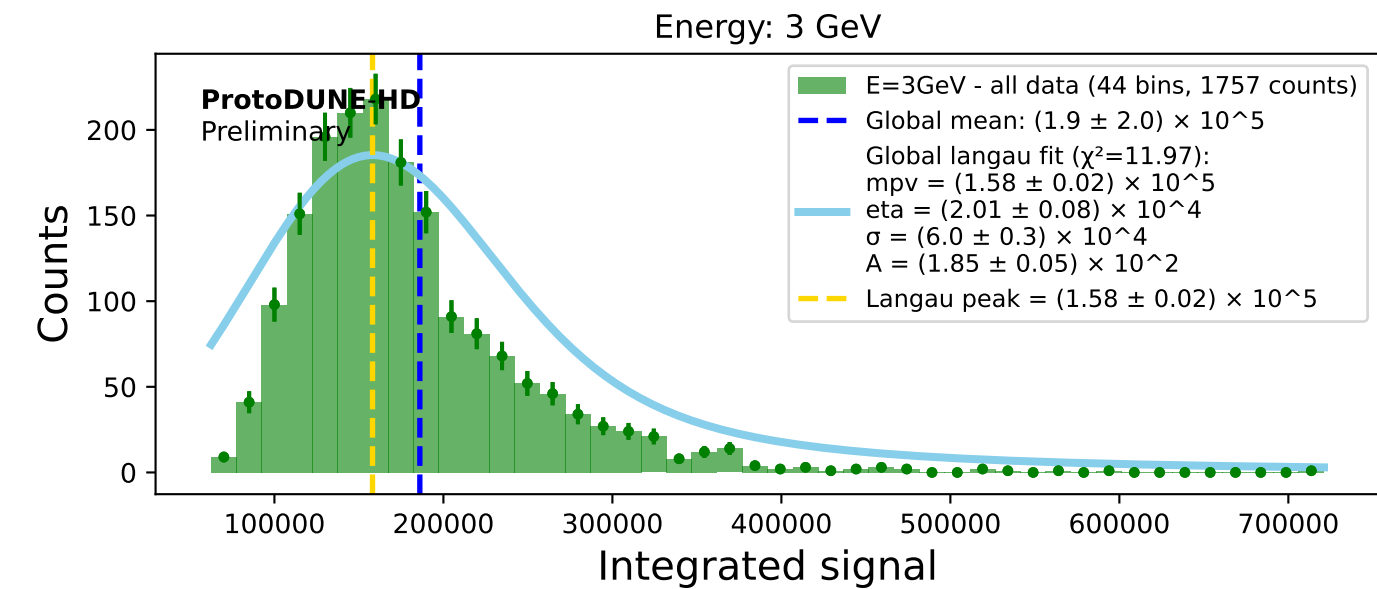
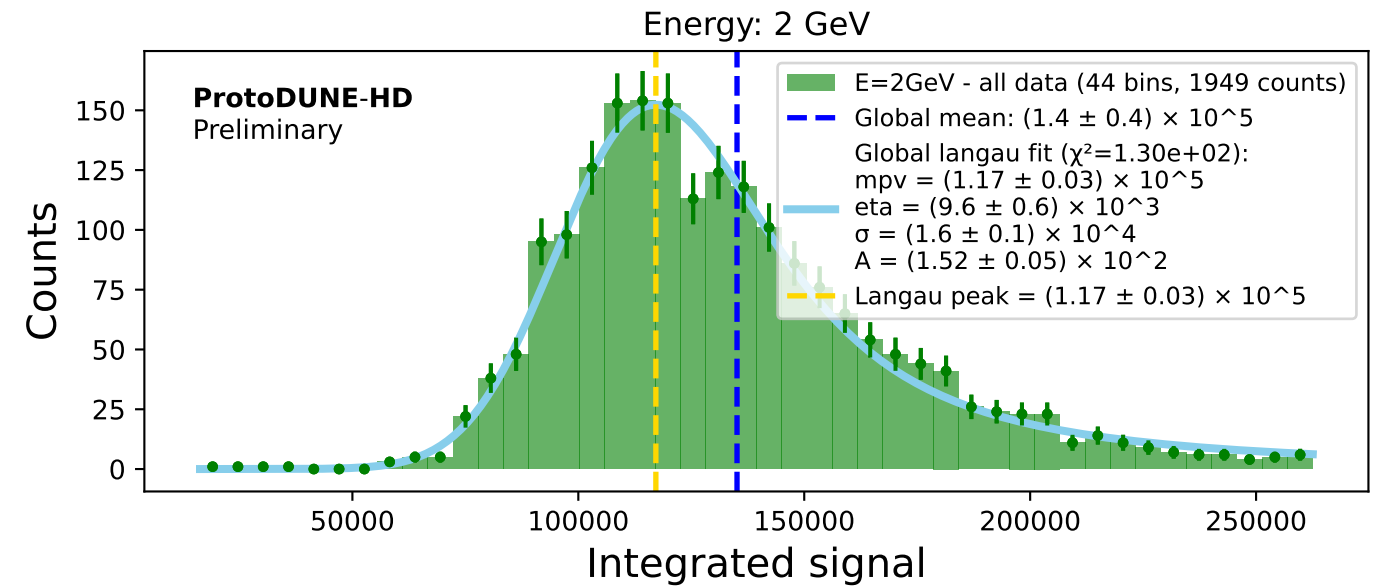
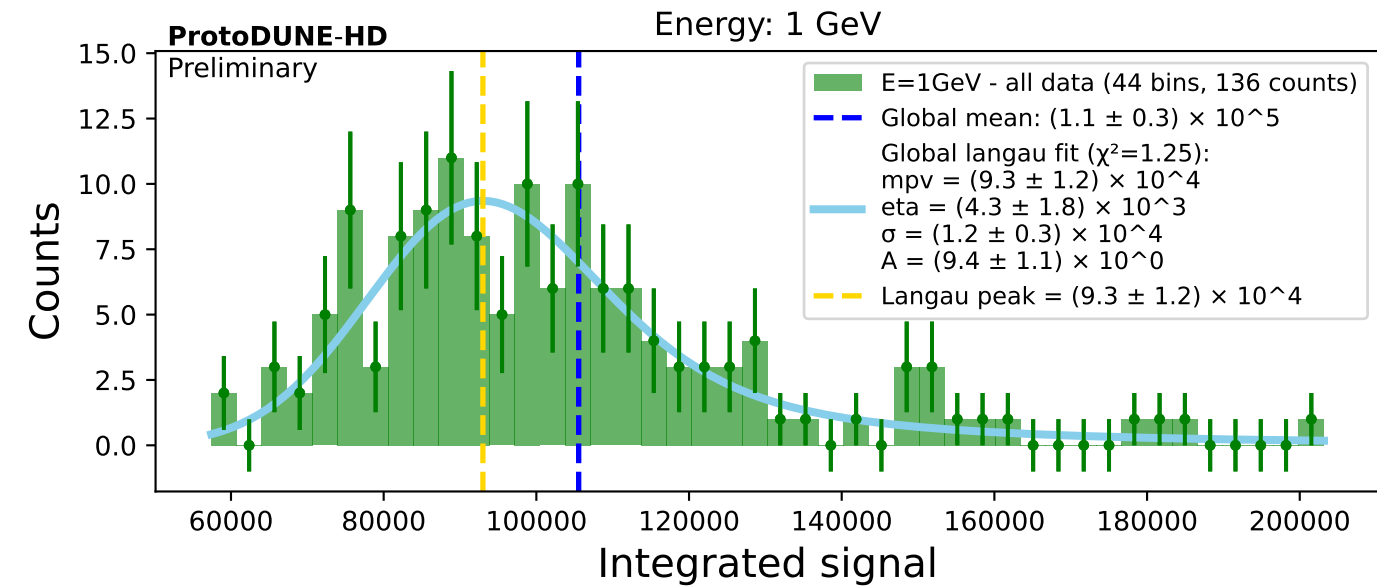
Energy: 5 GeV



Energy: 7 GeV



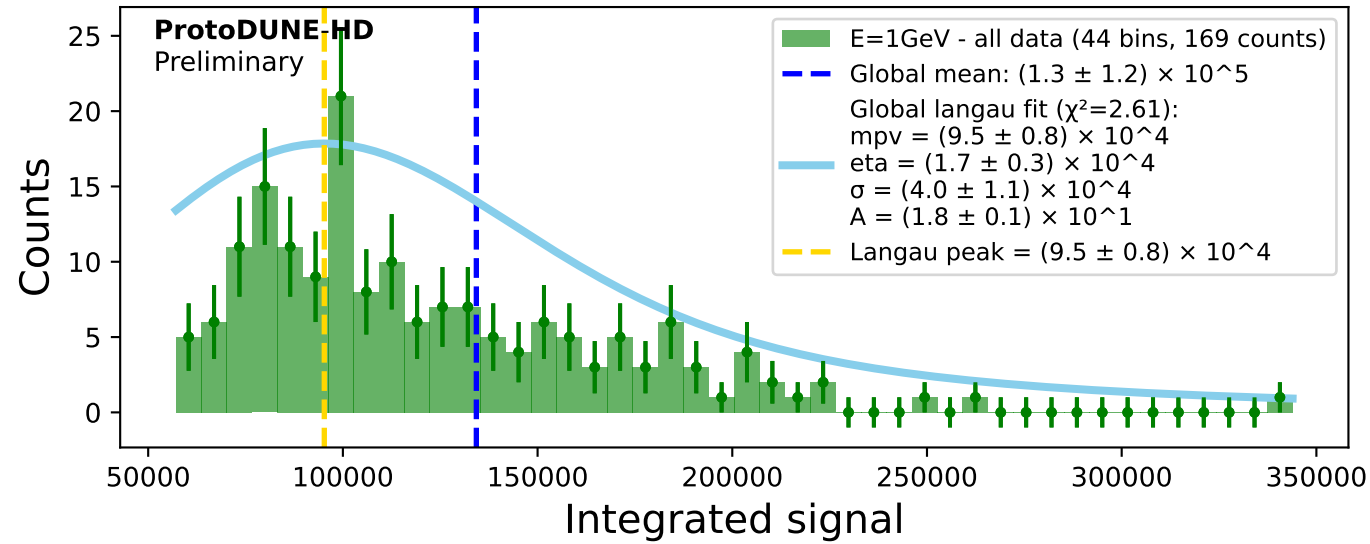
# Endpoint 109 - Channel 27 : Integral Before Analysis - 44 bins



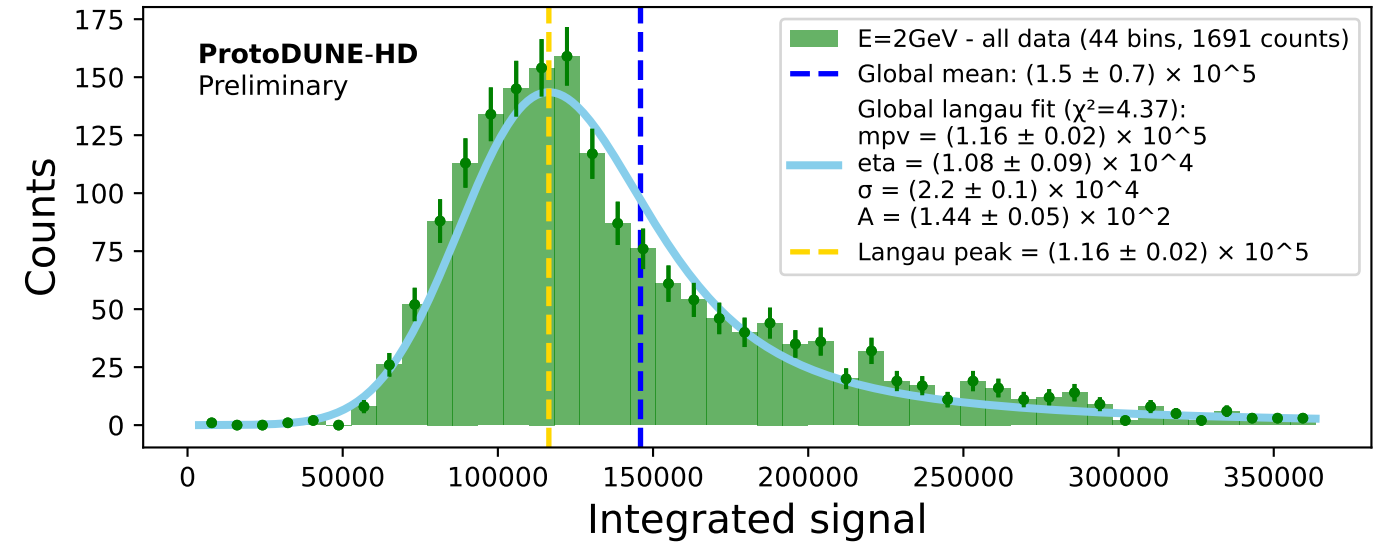


# Endpoint 109 - Channel 30 : Integral Before Analysis - 44 bins

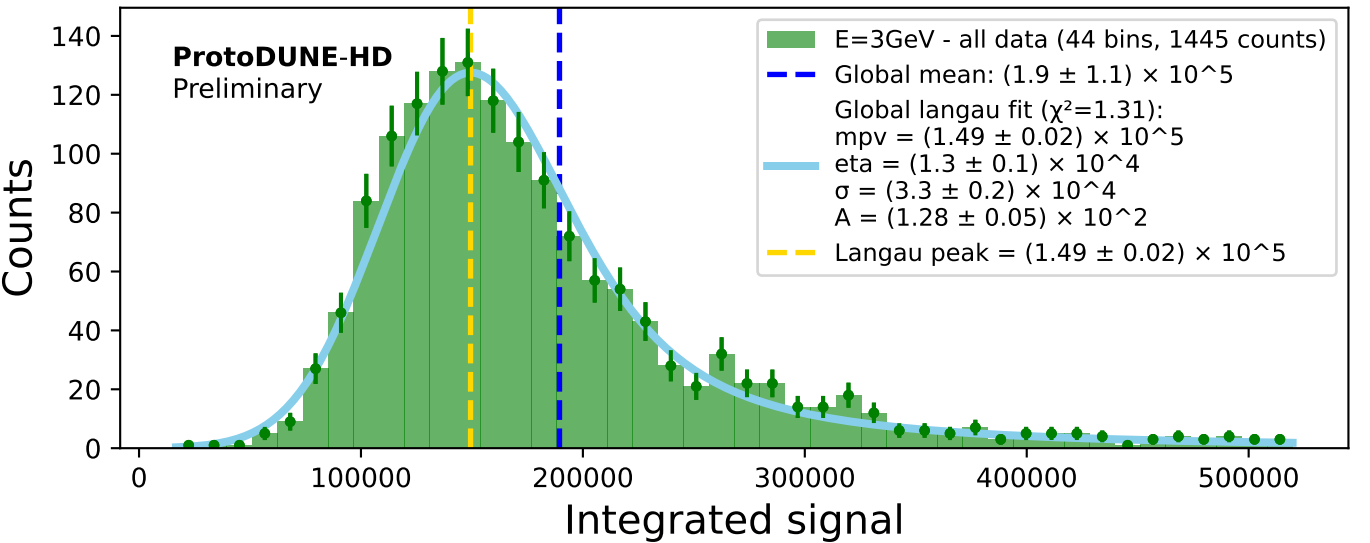
Energy: 1 GeV



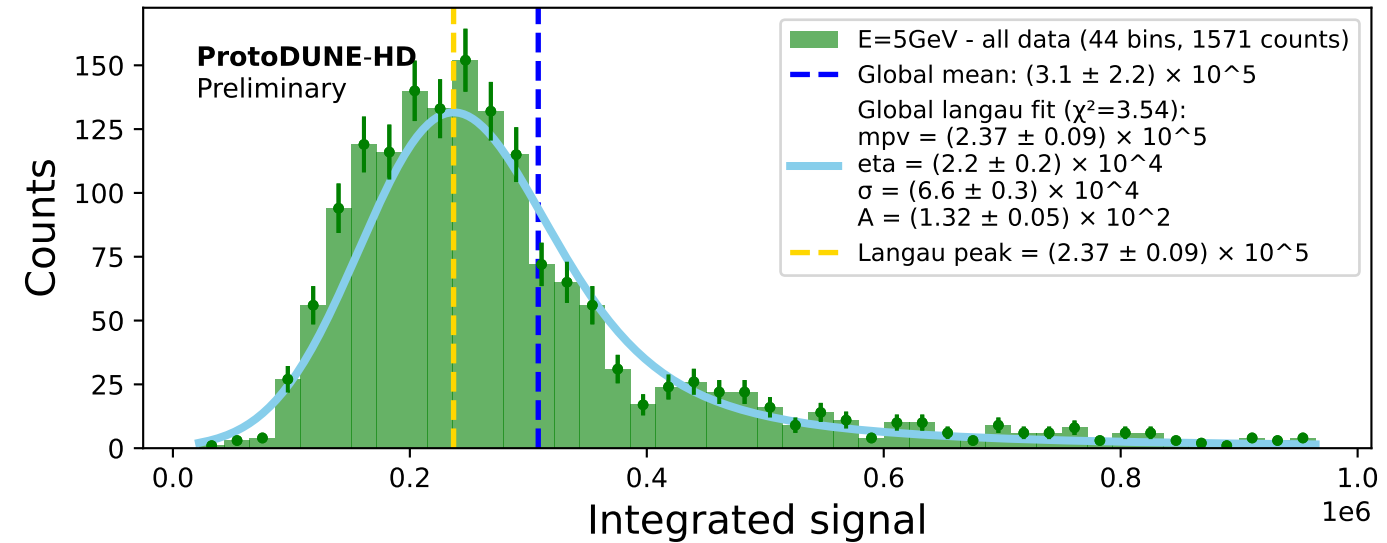
Energy: 2 GeV



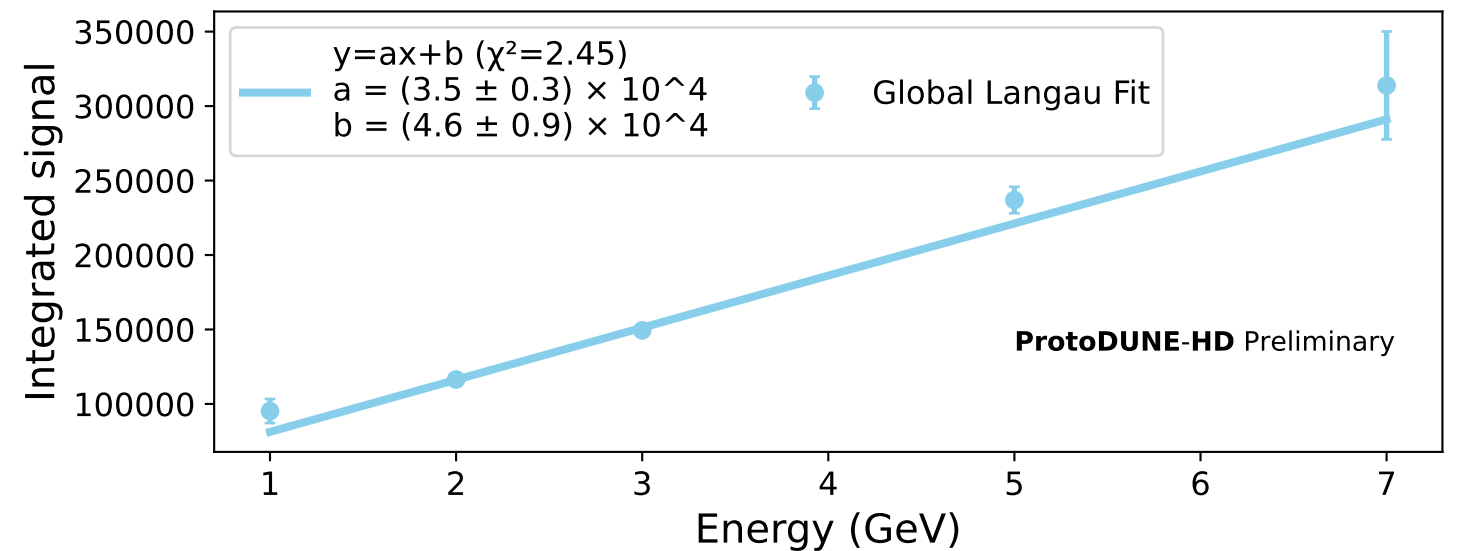
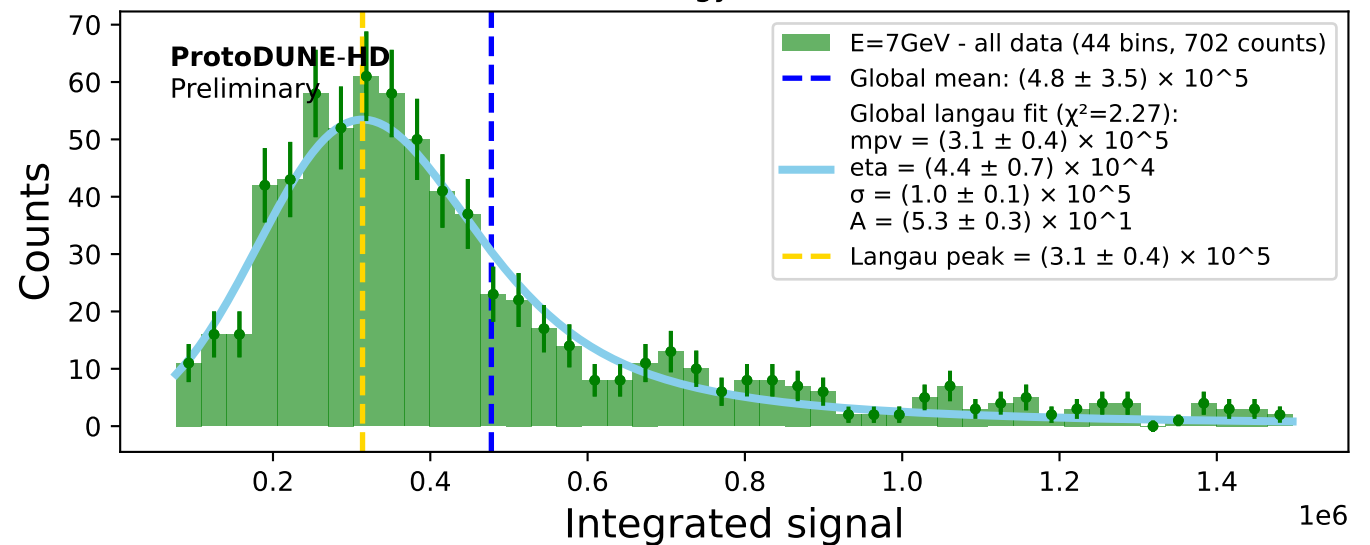
Energy: 3 GeV



Energy: 5 GeV

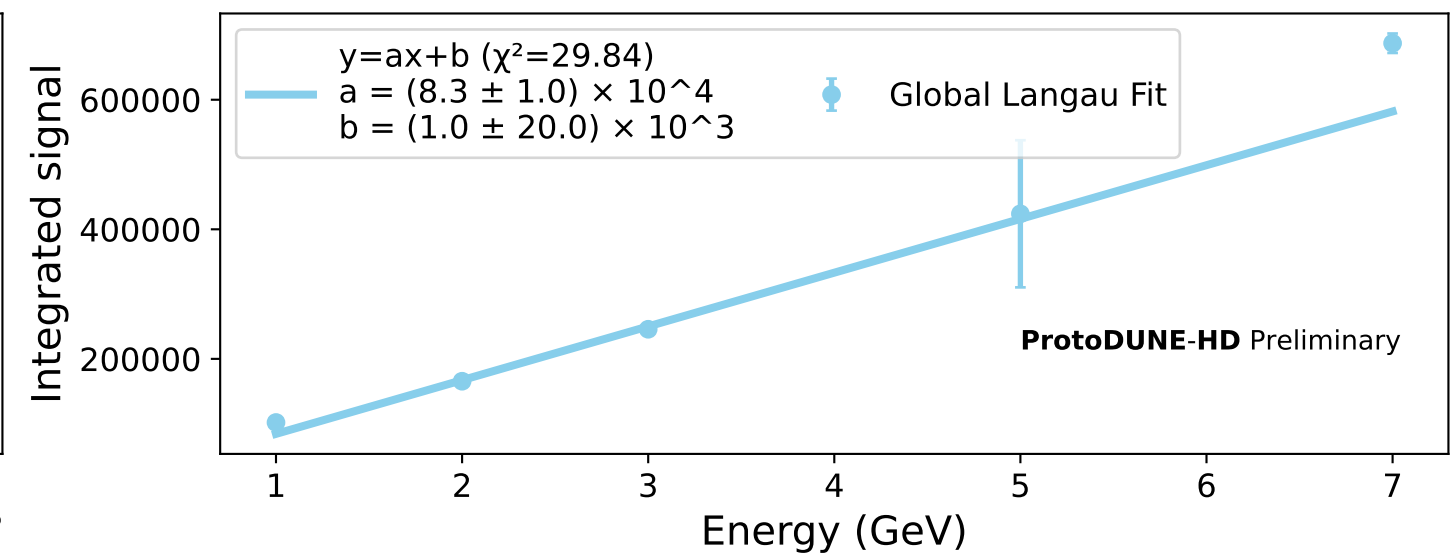
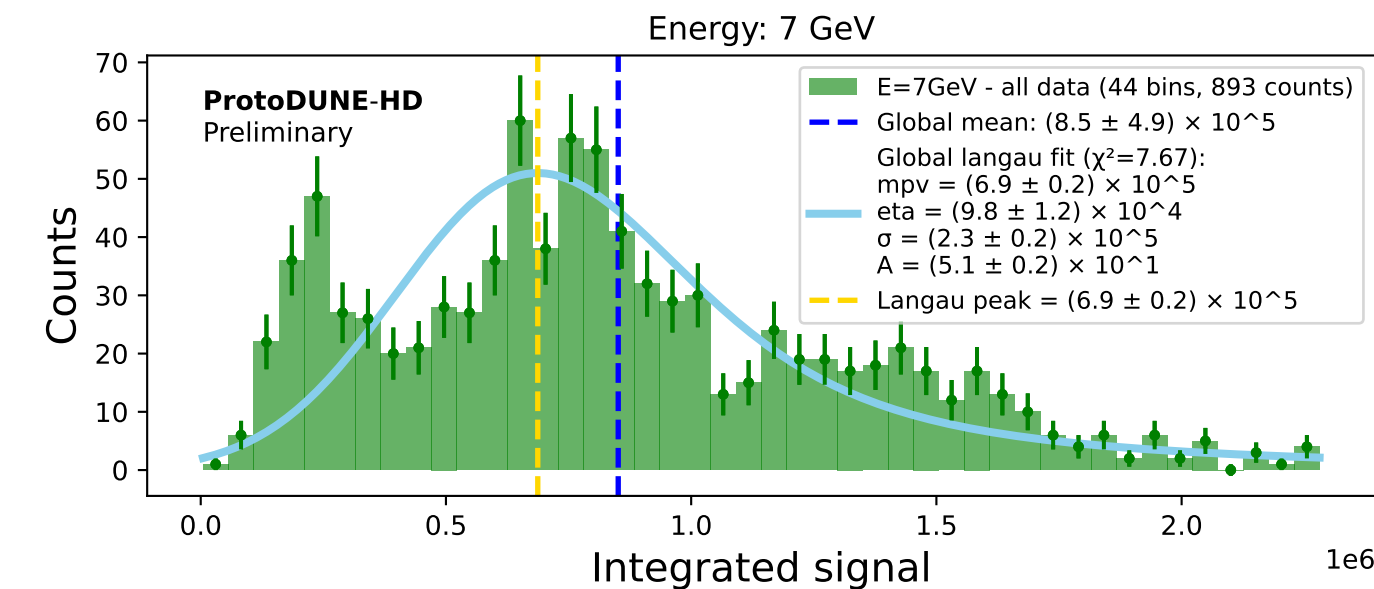
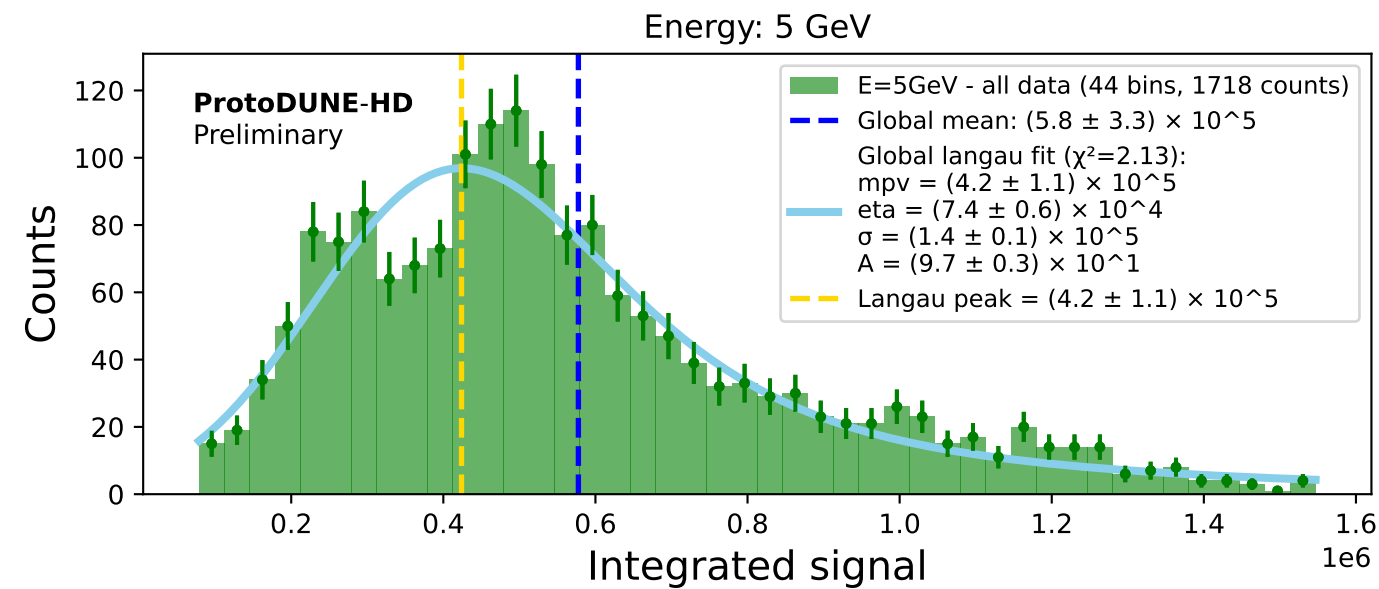
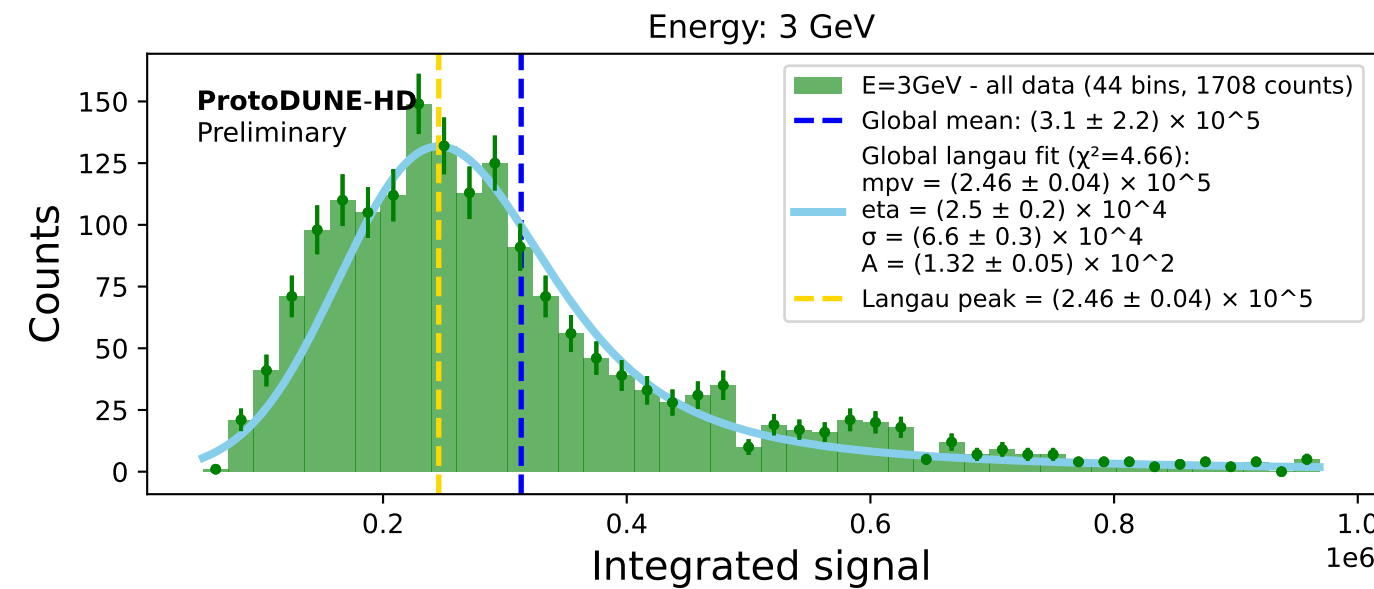
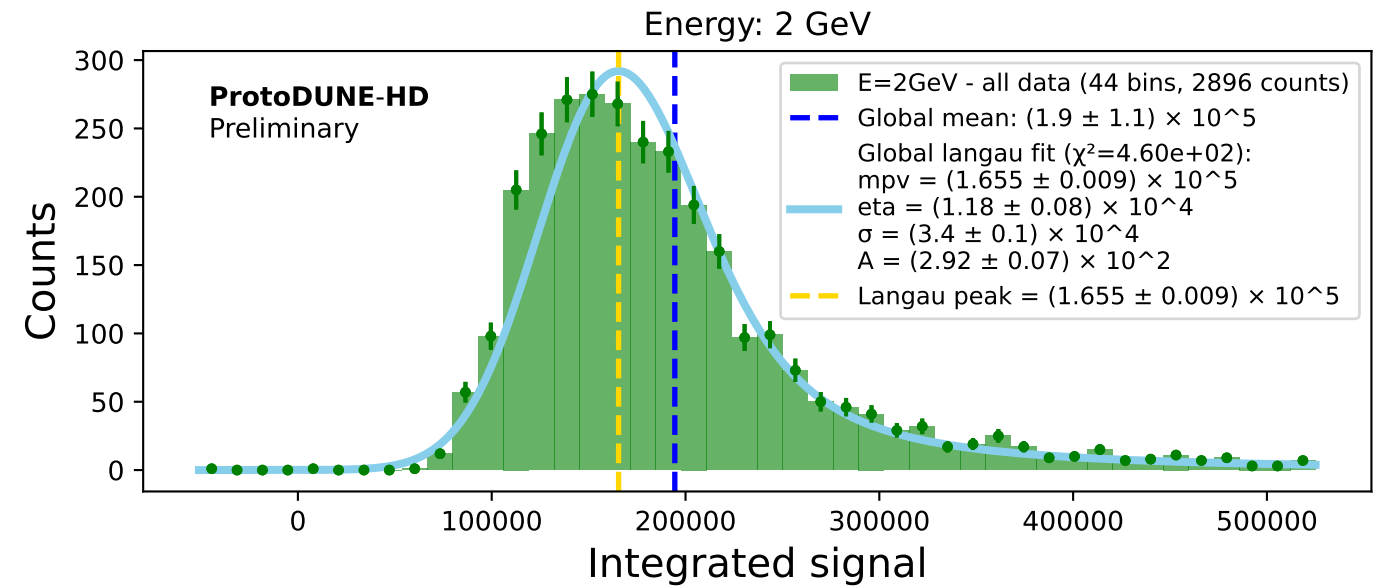
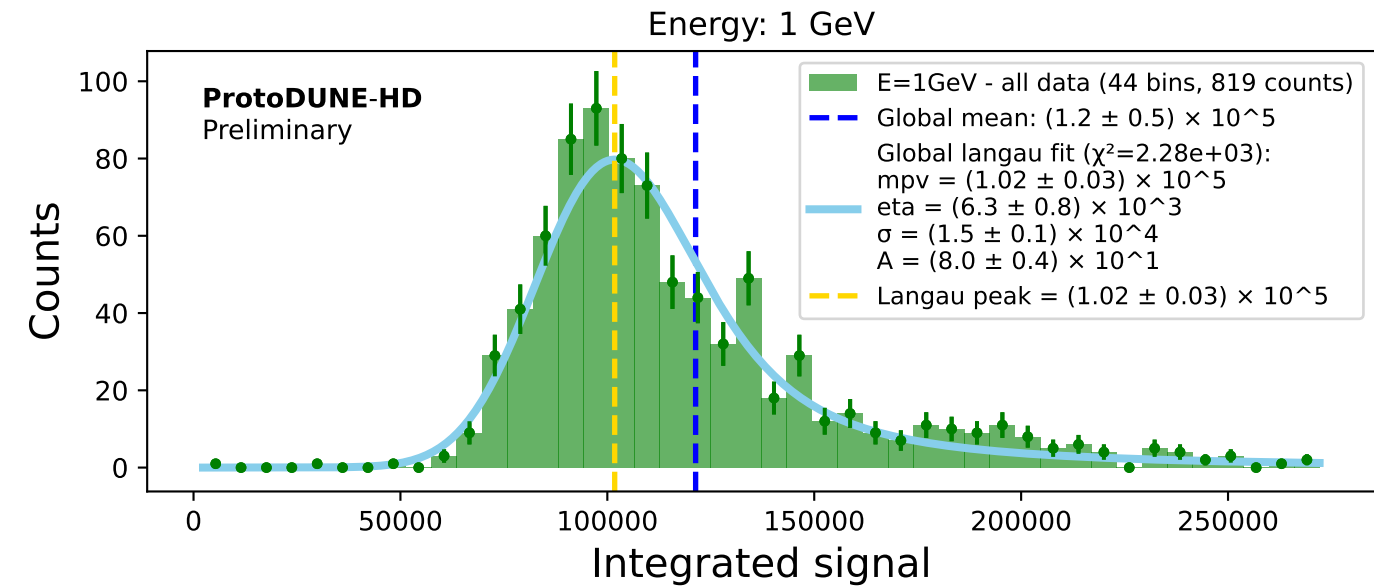


Energy: 7 GeV



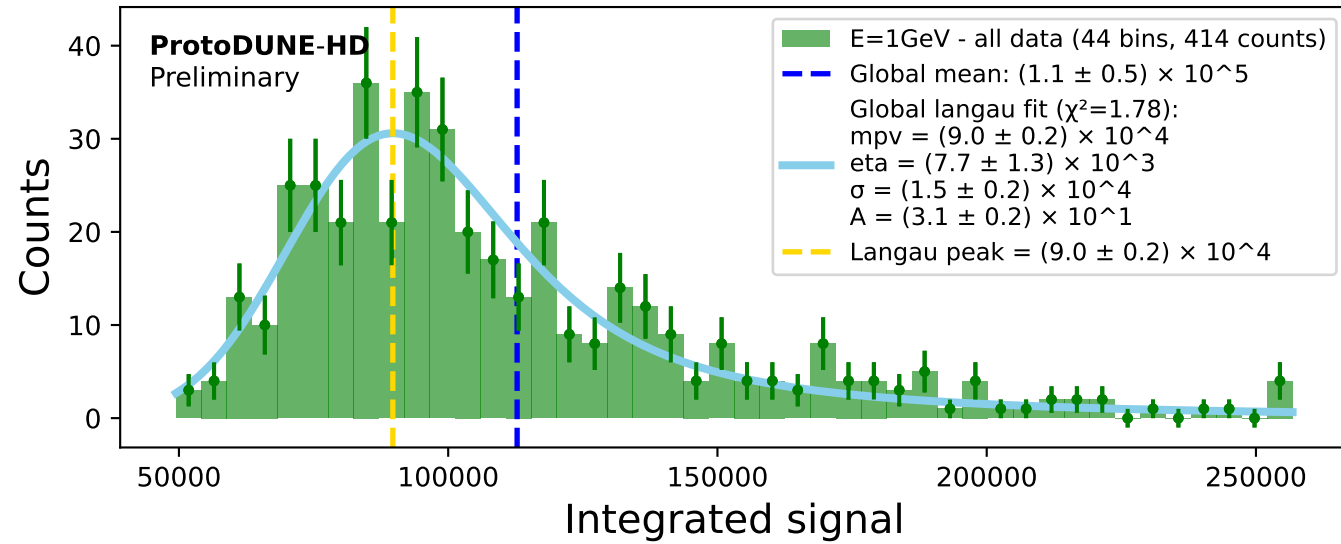


# Endpoint 109 - Channel 31 : Integral Before Analysis - 44 bins

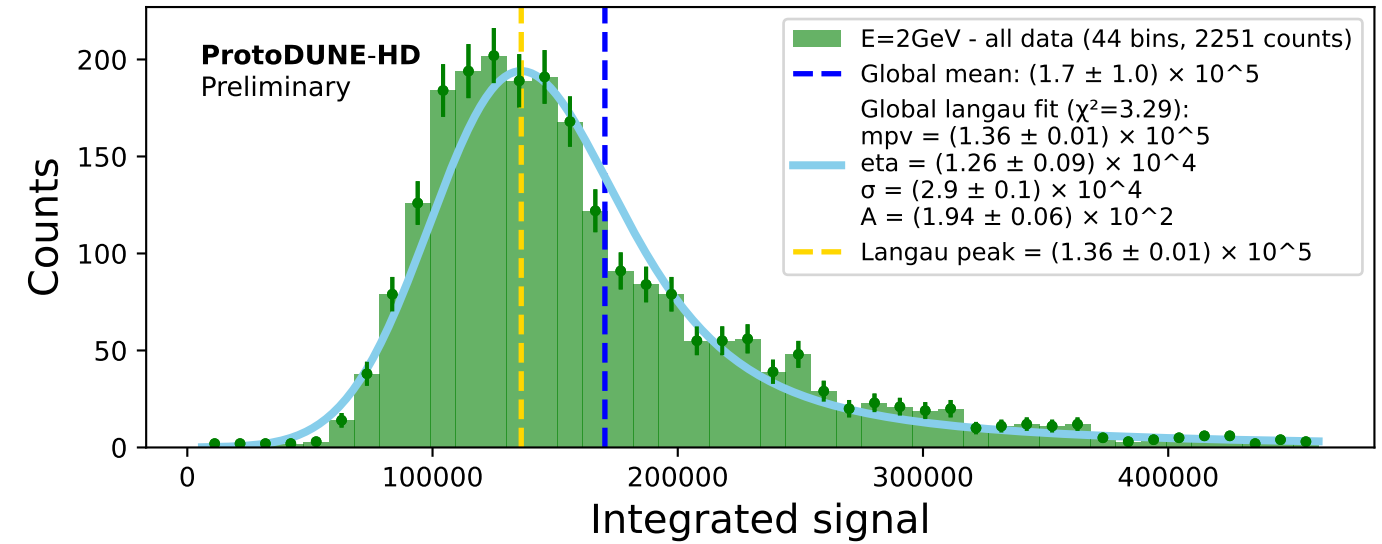


# Endpoint 109 - Channel 32 : Integral Before Analysis - 44 bins

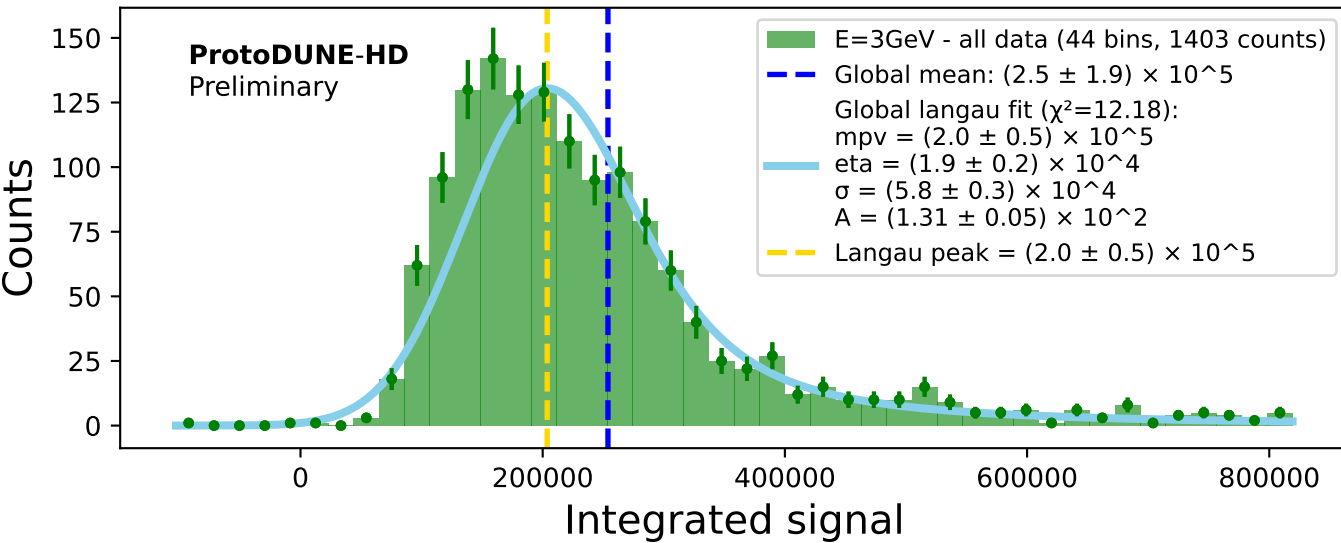
Energy: 1 GeV



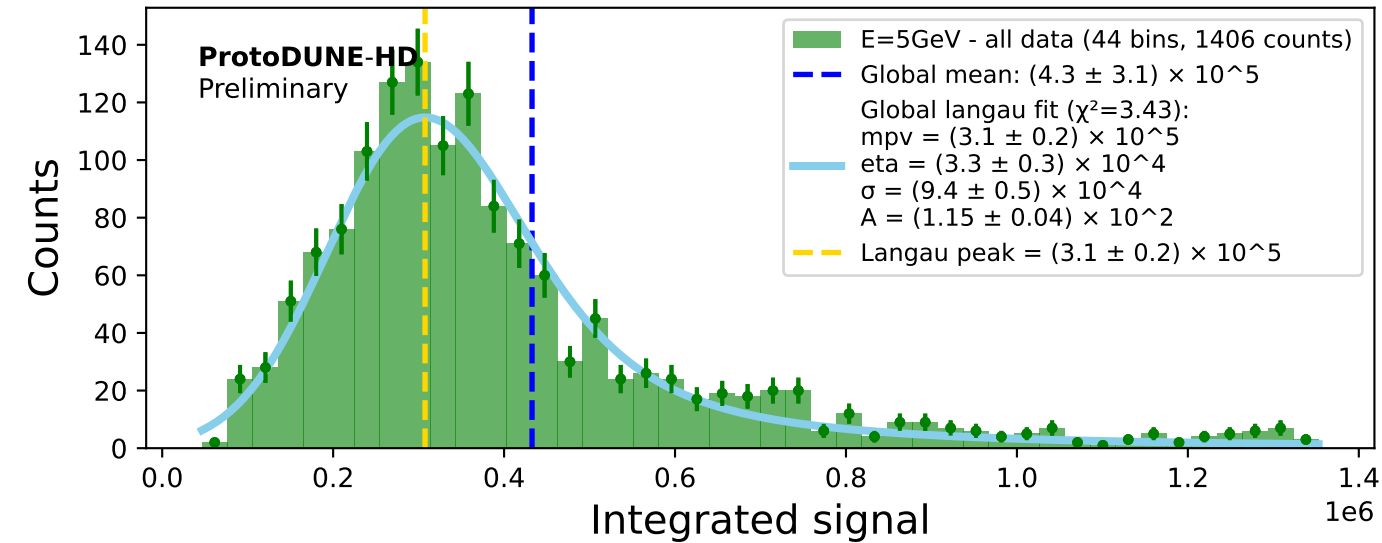
Energy: 2 GeV



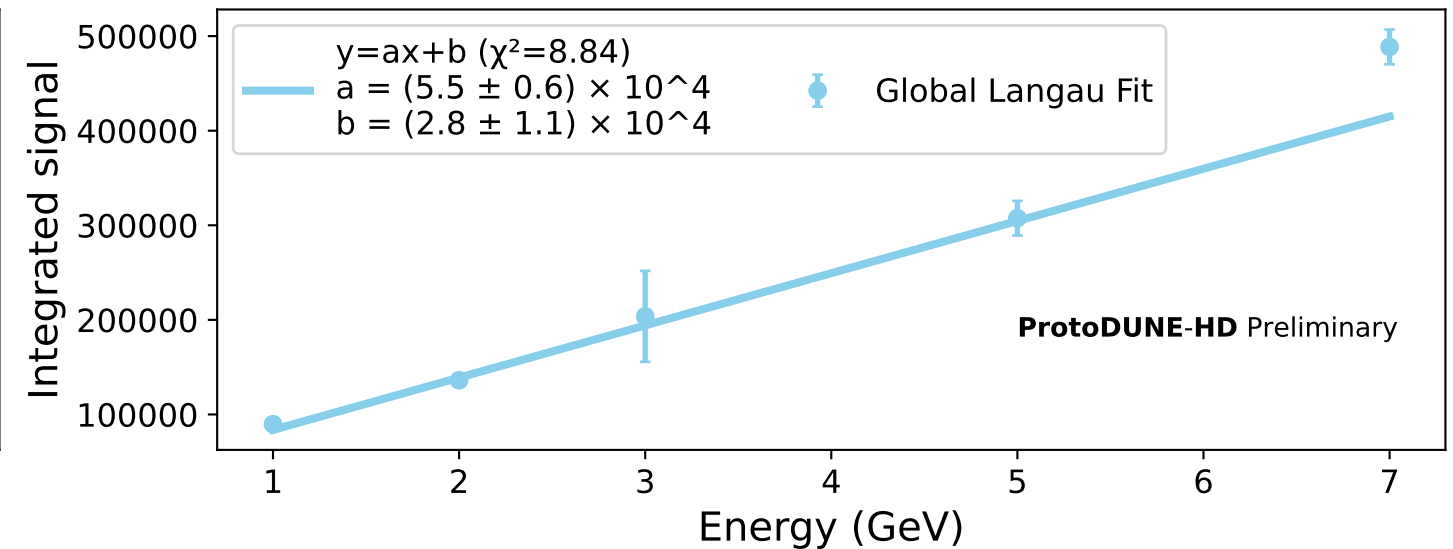
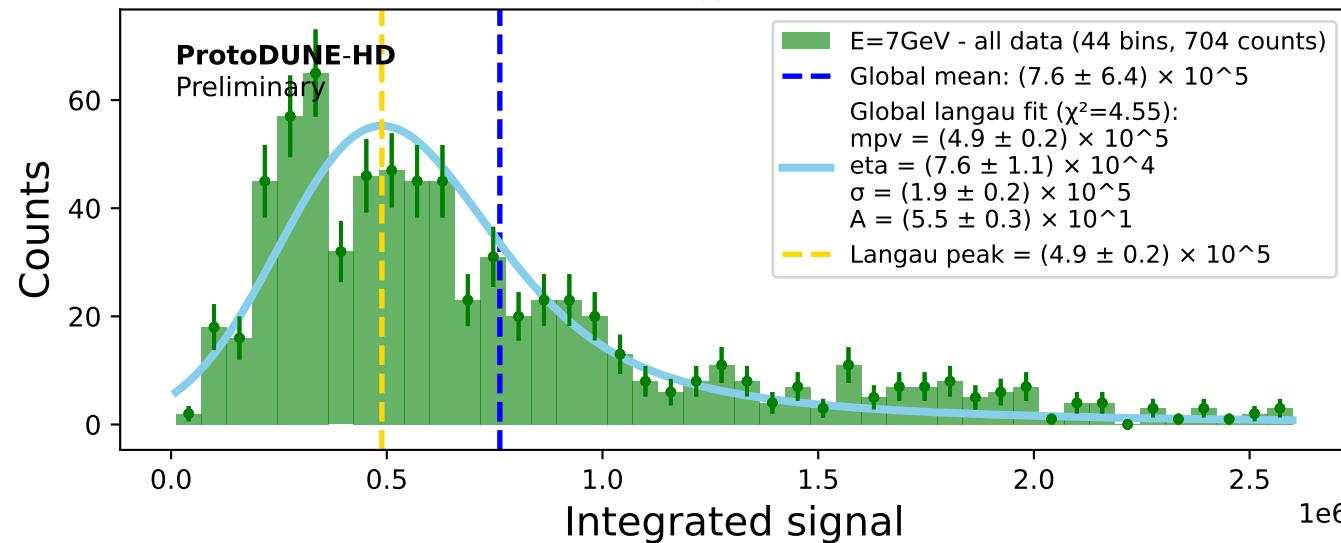
Energy: 3 GeV



Energy: 5 GeV

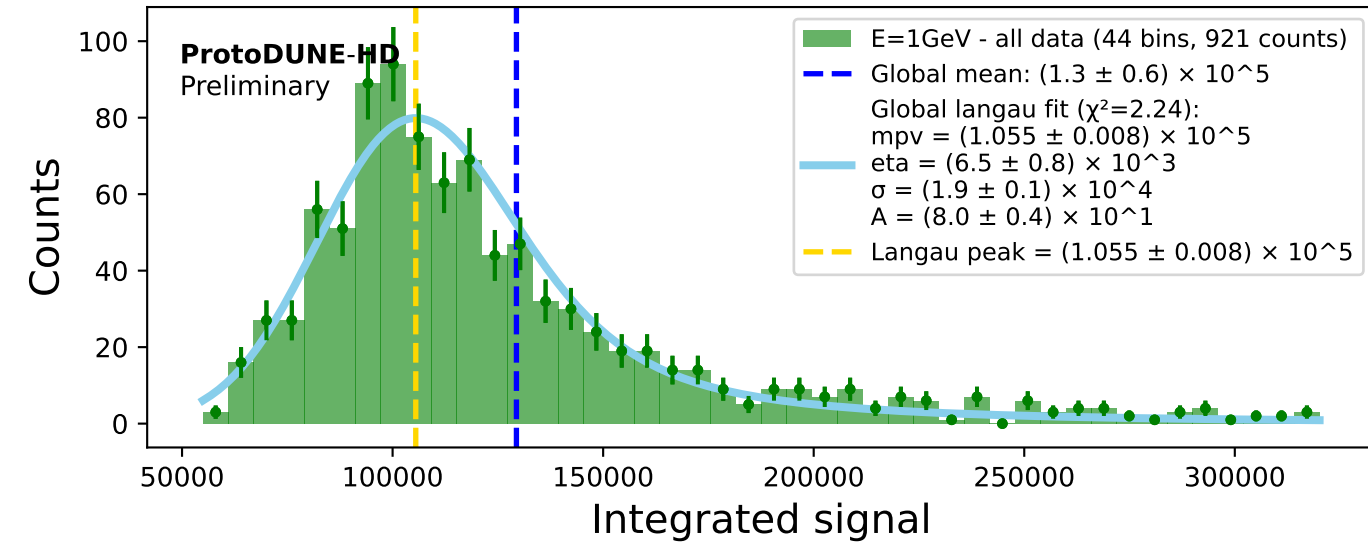


Energy: 7 GeV

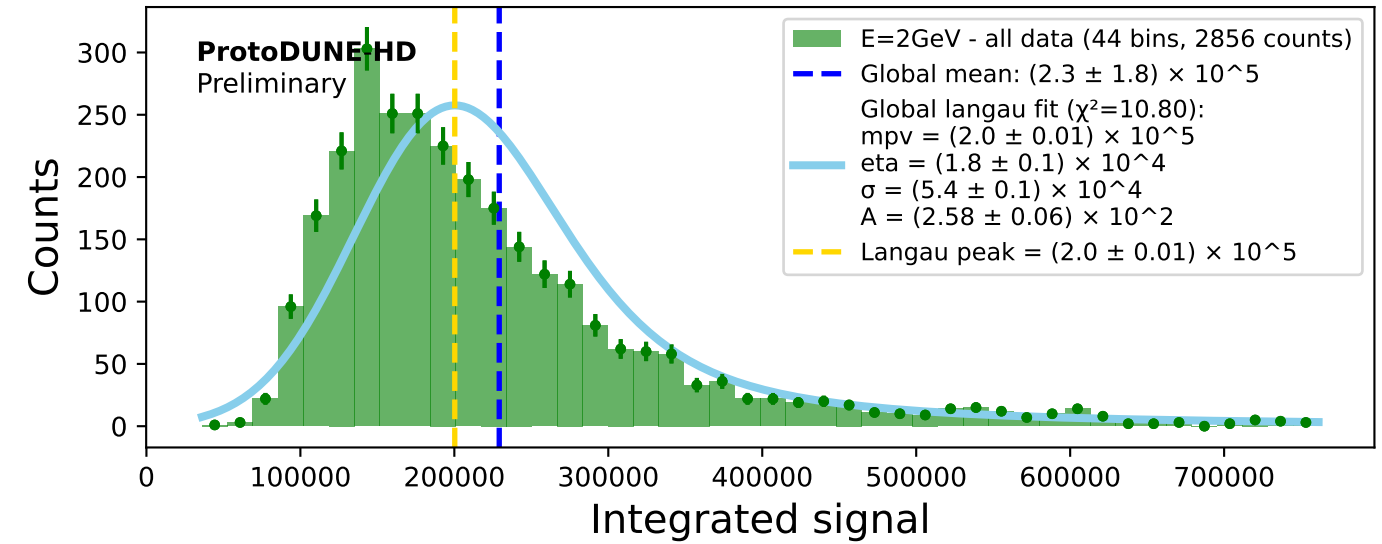


# Endpoint 109 - Channel 33 : Integral Before Analysis - 44 bins

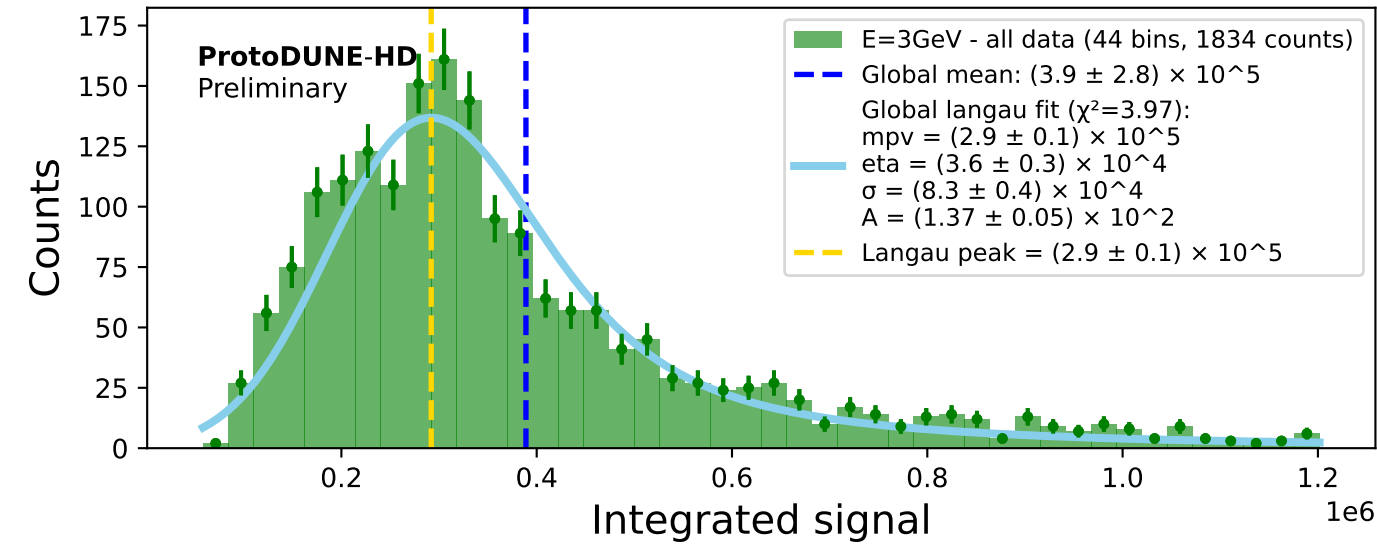
Energy: 1 GeV



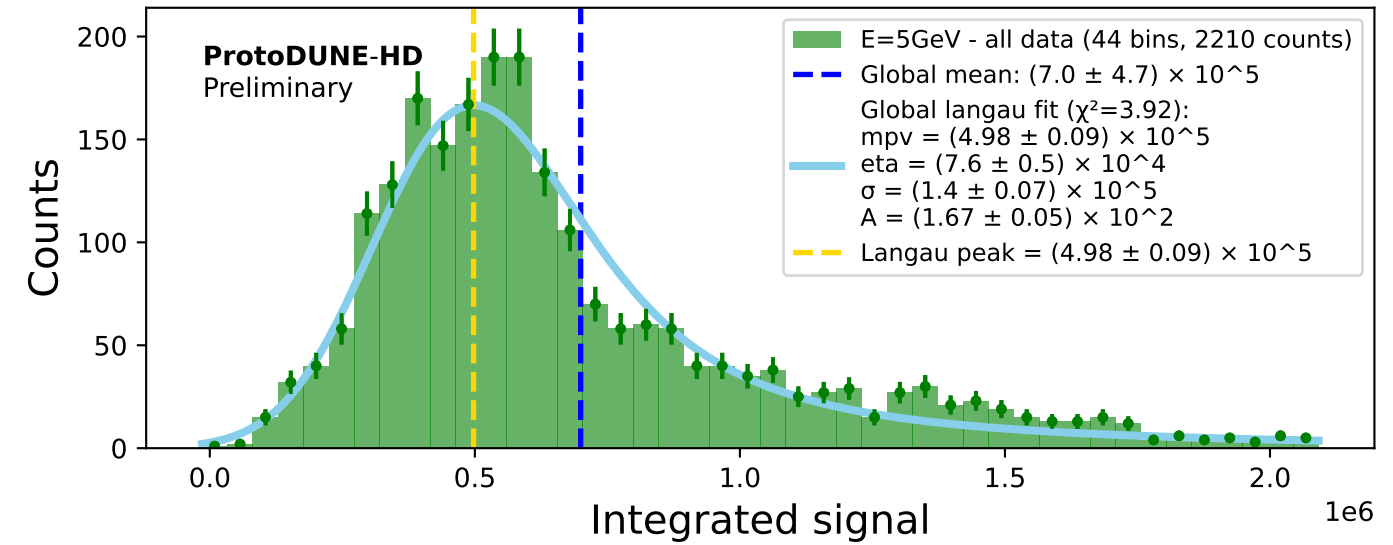
Energy: 2 GeV



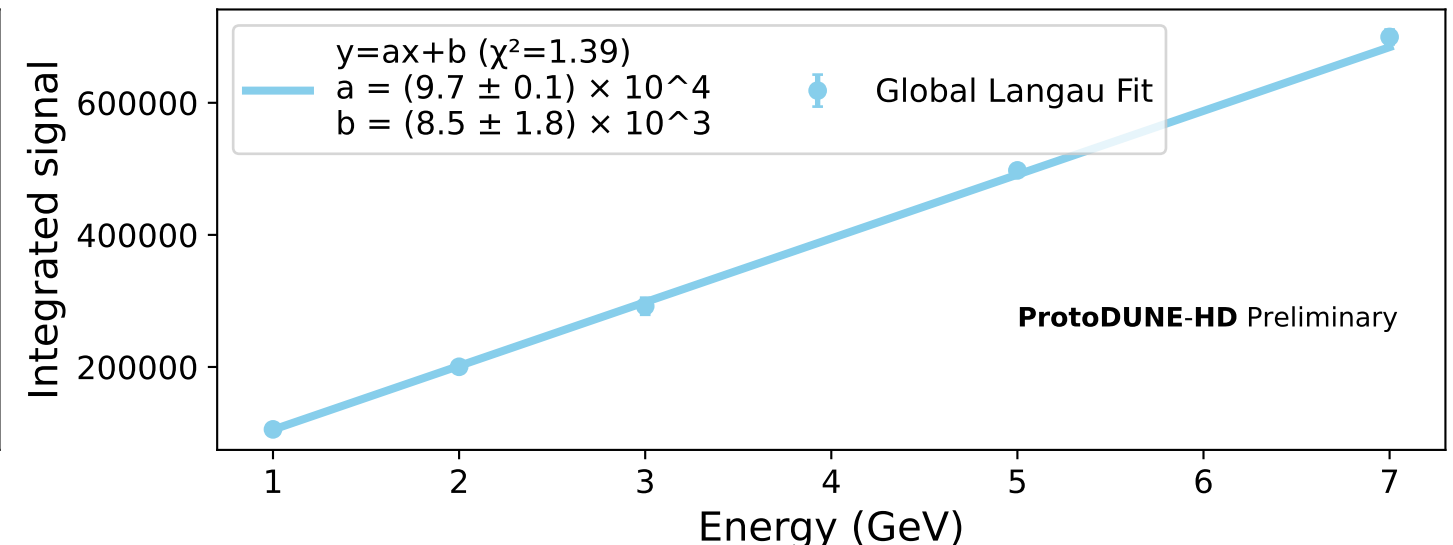
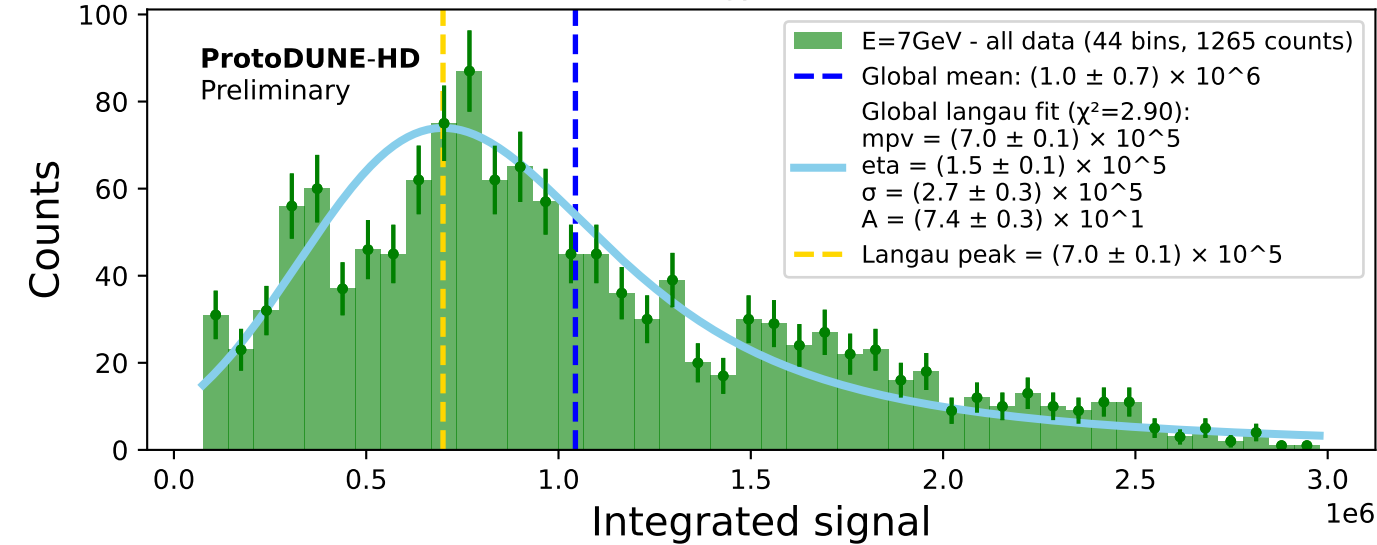
Energy: 3 GeV



Energy: 5 GeV

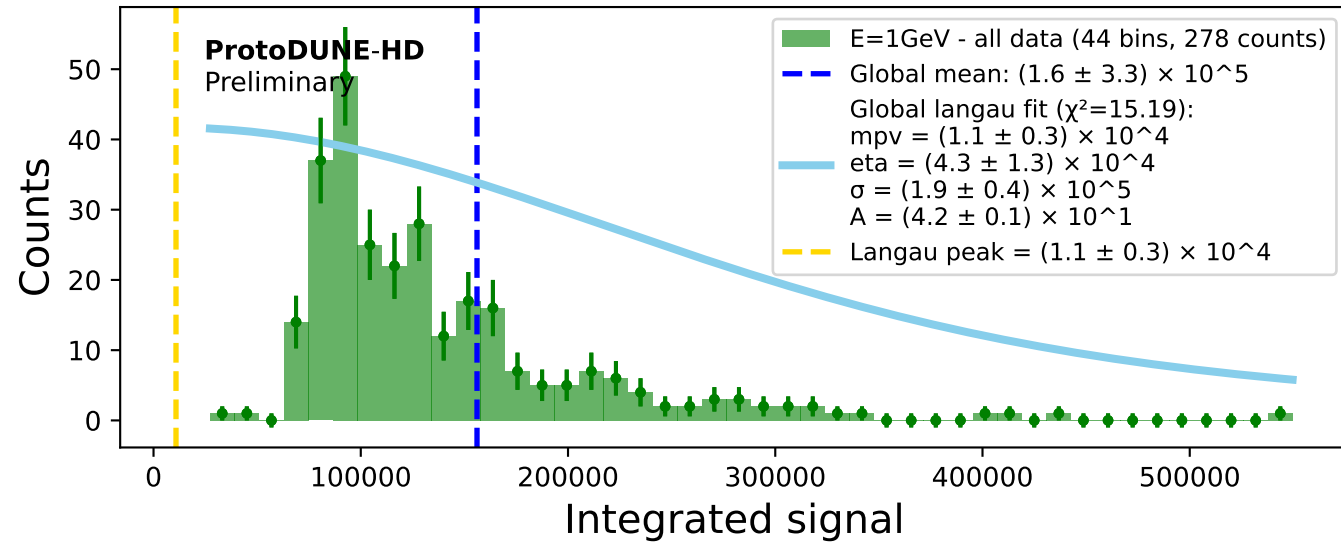


Energy: 7 GeV

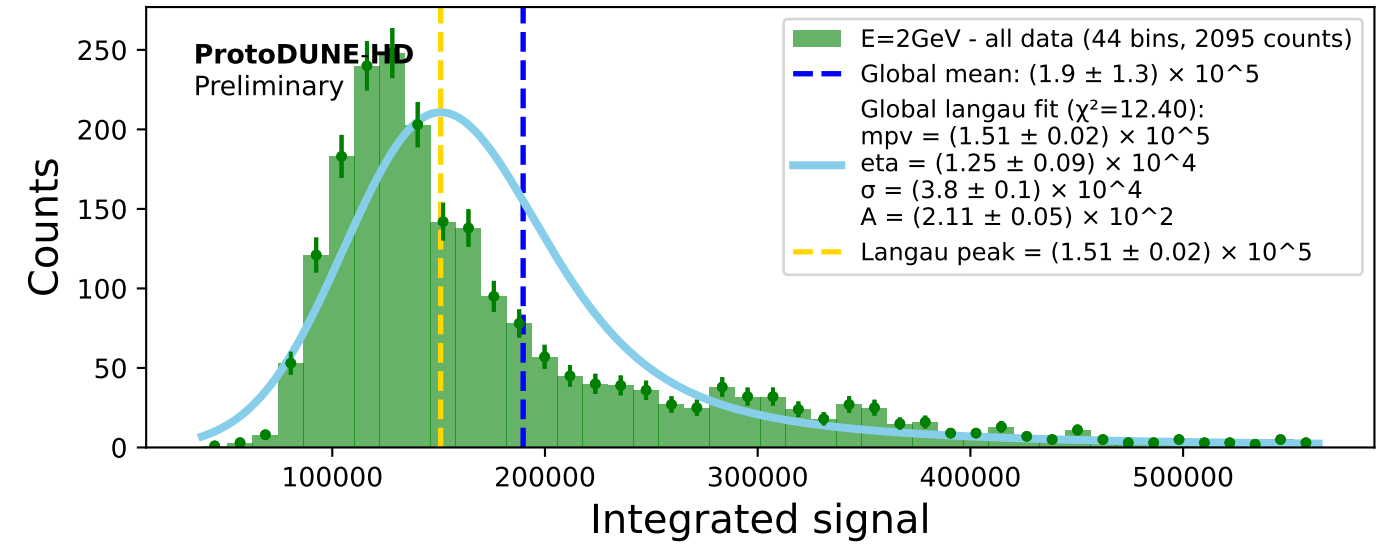


# Endpoint 109 - Channel 34 : Integral Before Analysis - 44 bins

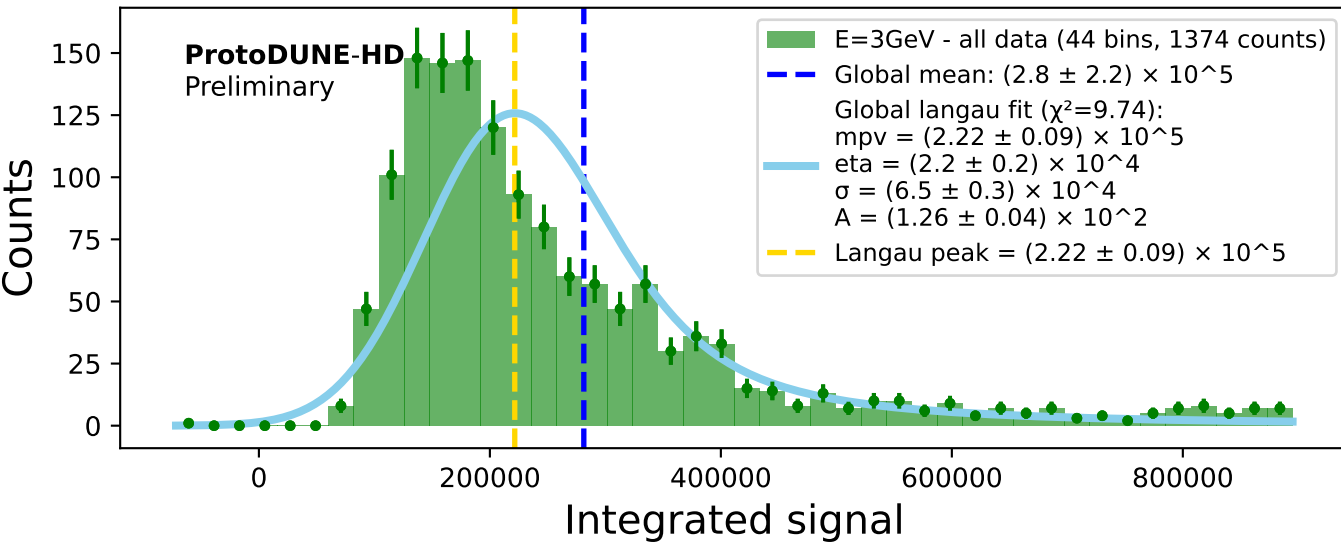
Energy: 1 GeV



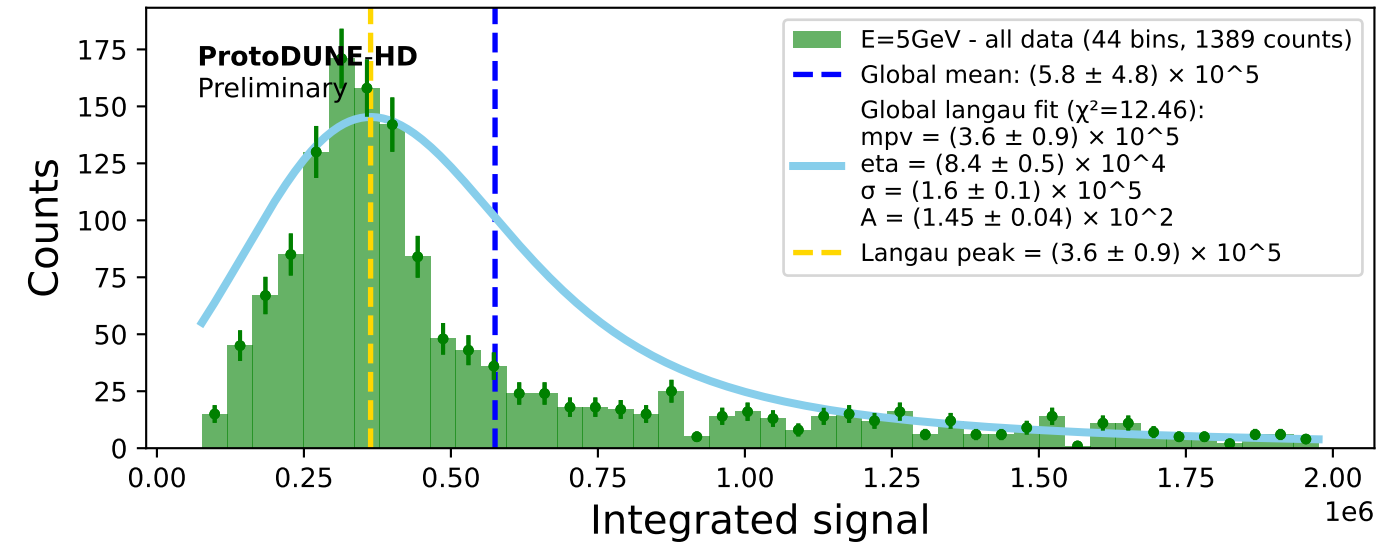
Energy: 2 GeV



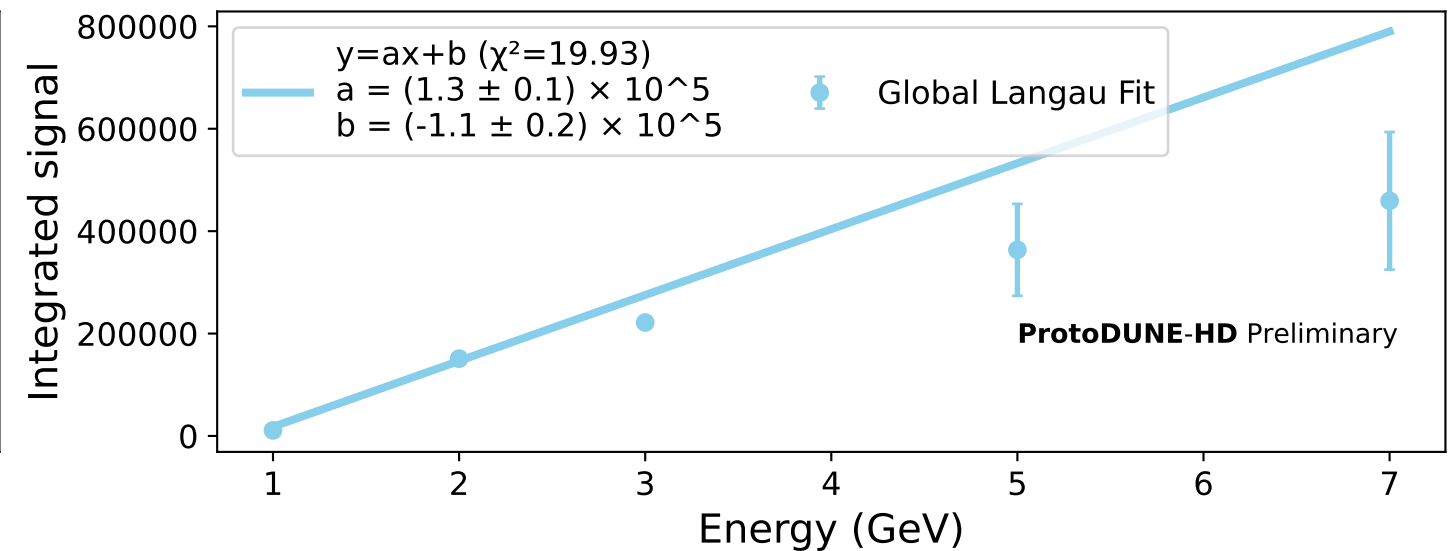
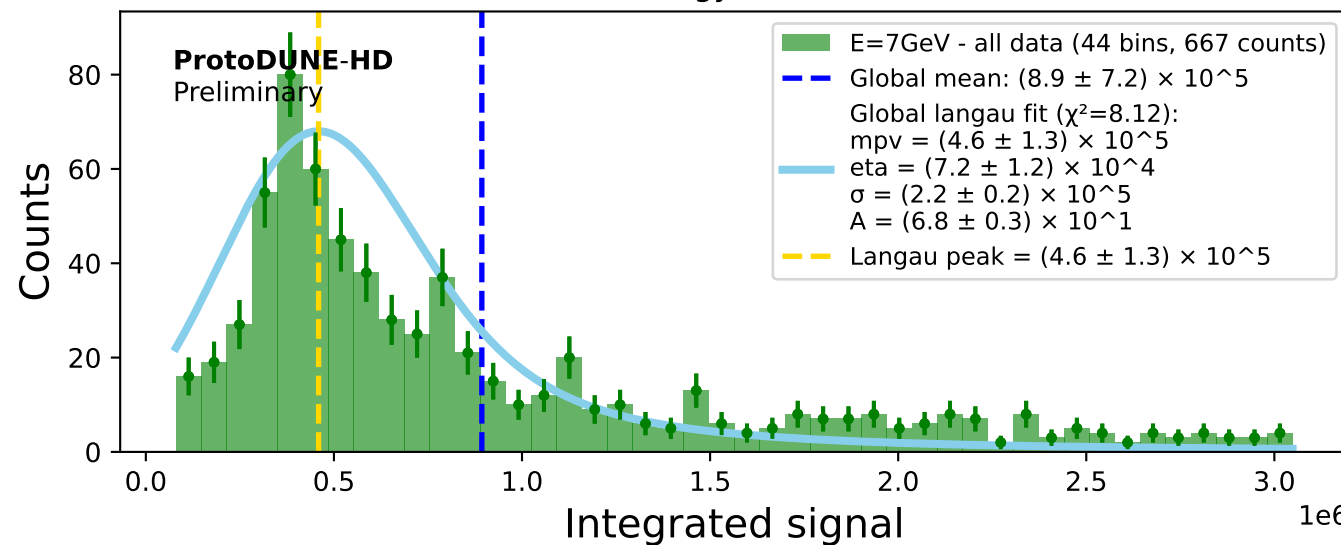
Energy: 3 GeV



Energy: 5 GeV

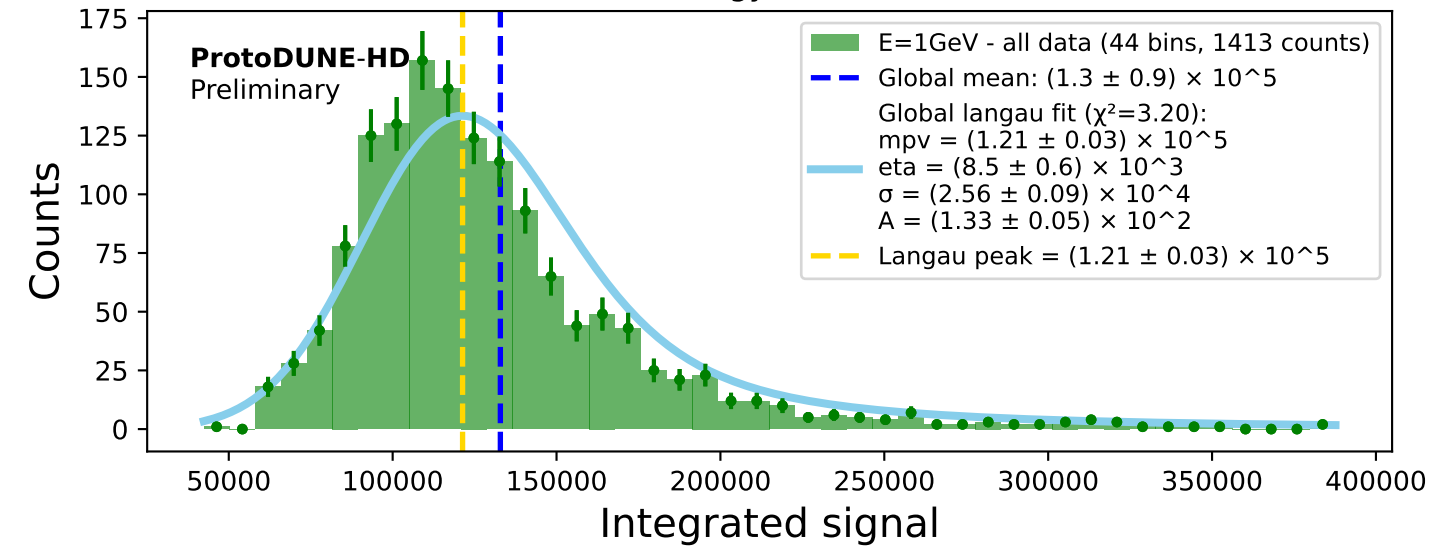


Energy: 7 GeV

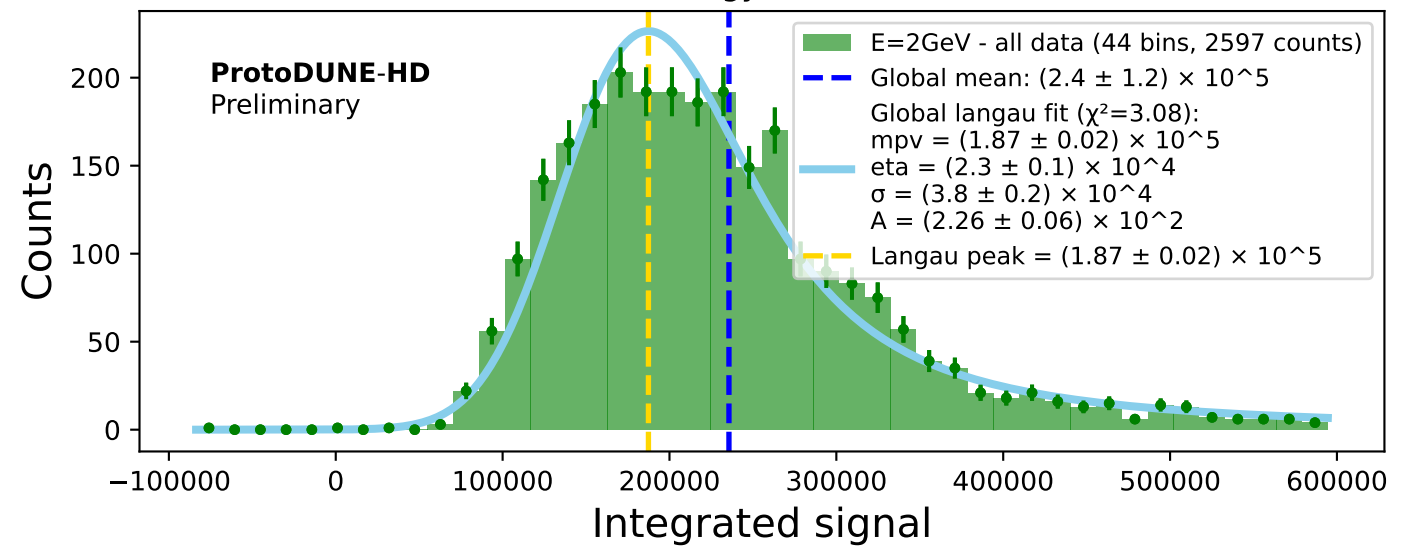


# Endpoint 109 - Channel 35 : Integral Before Analysis - 44 bins

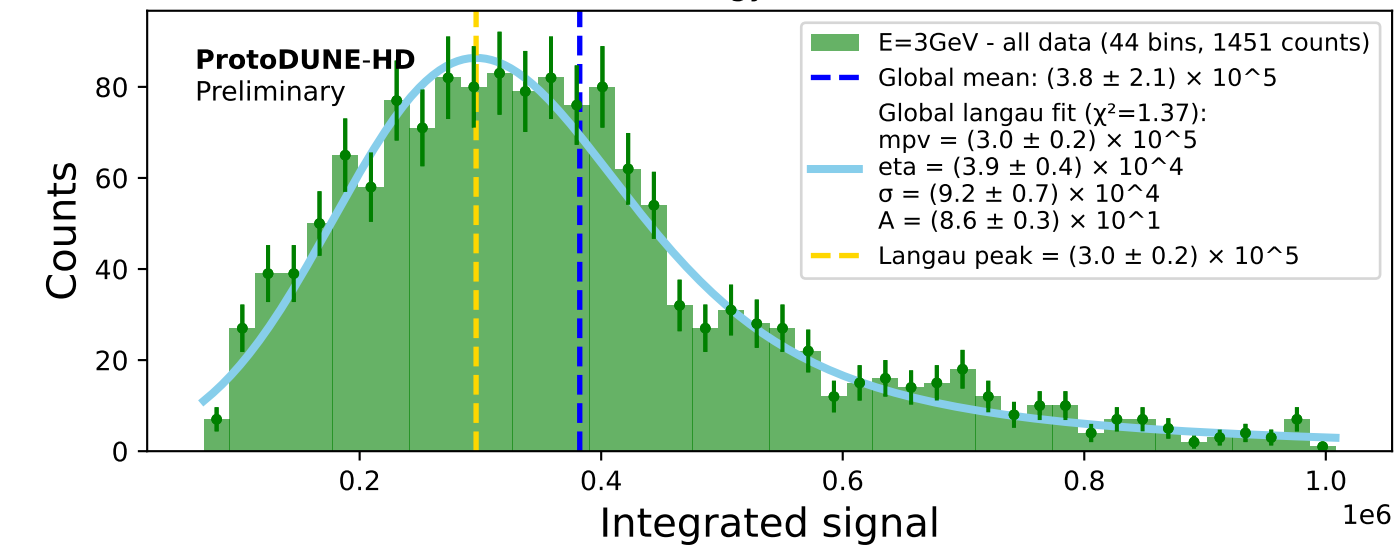
Energy: 1 GeV



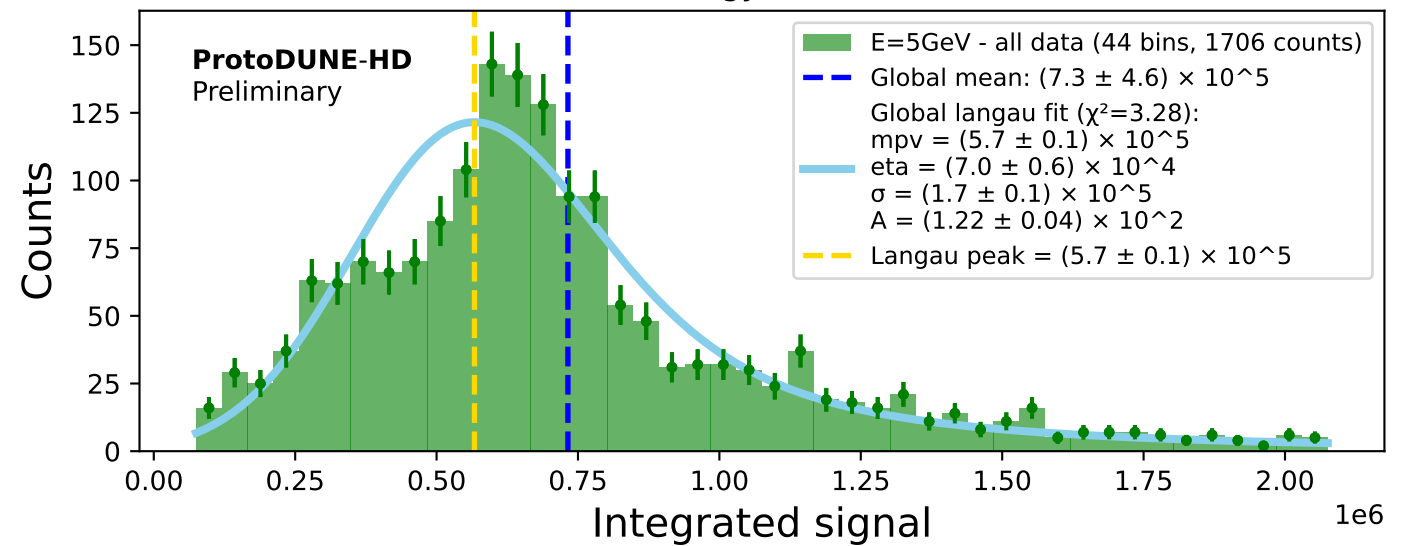
Energy: 2 GeV



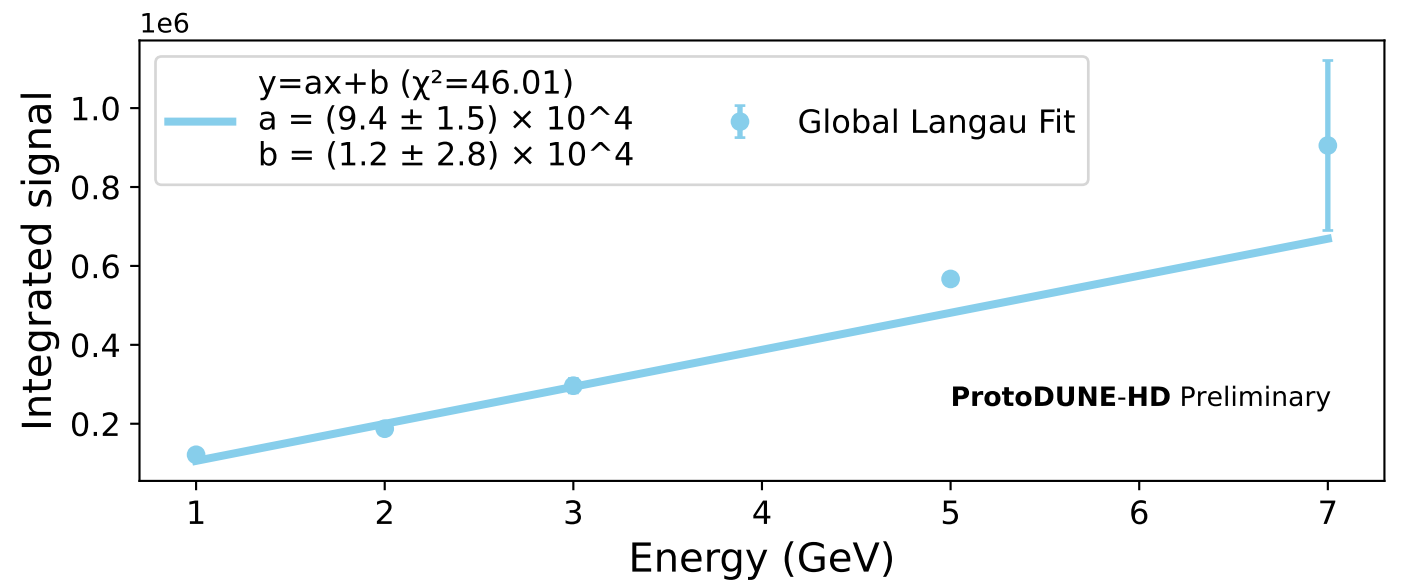
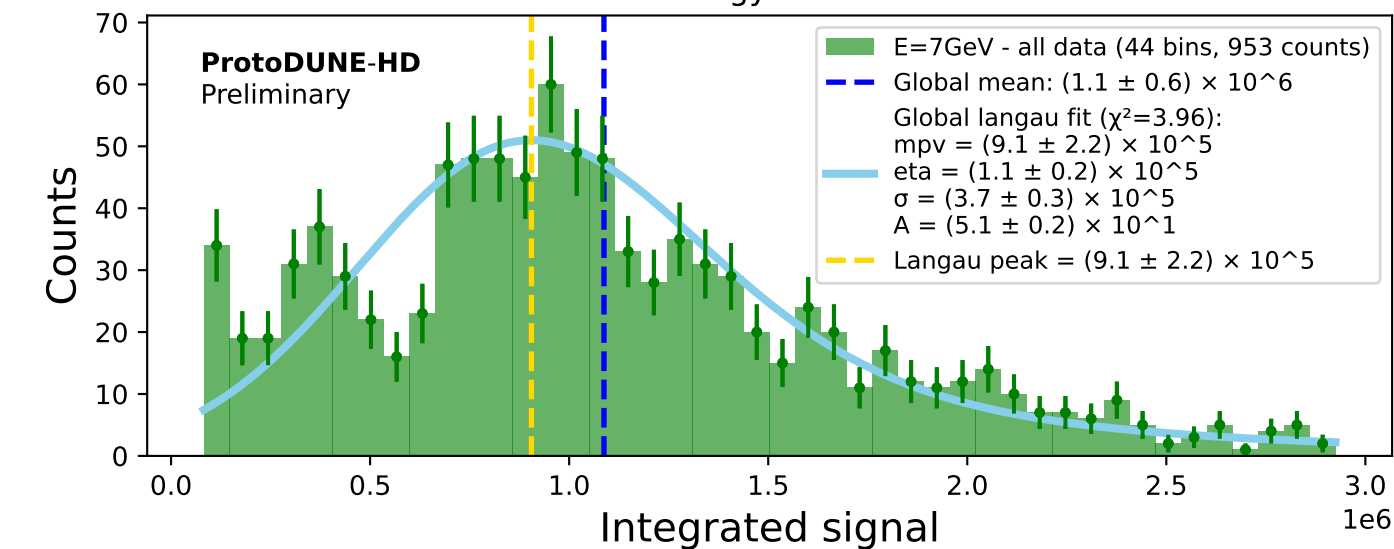
Energy: 3 GeV



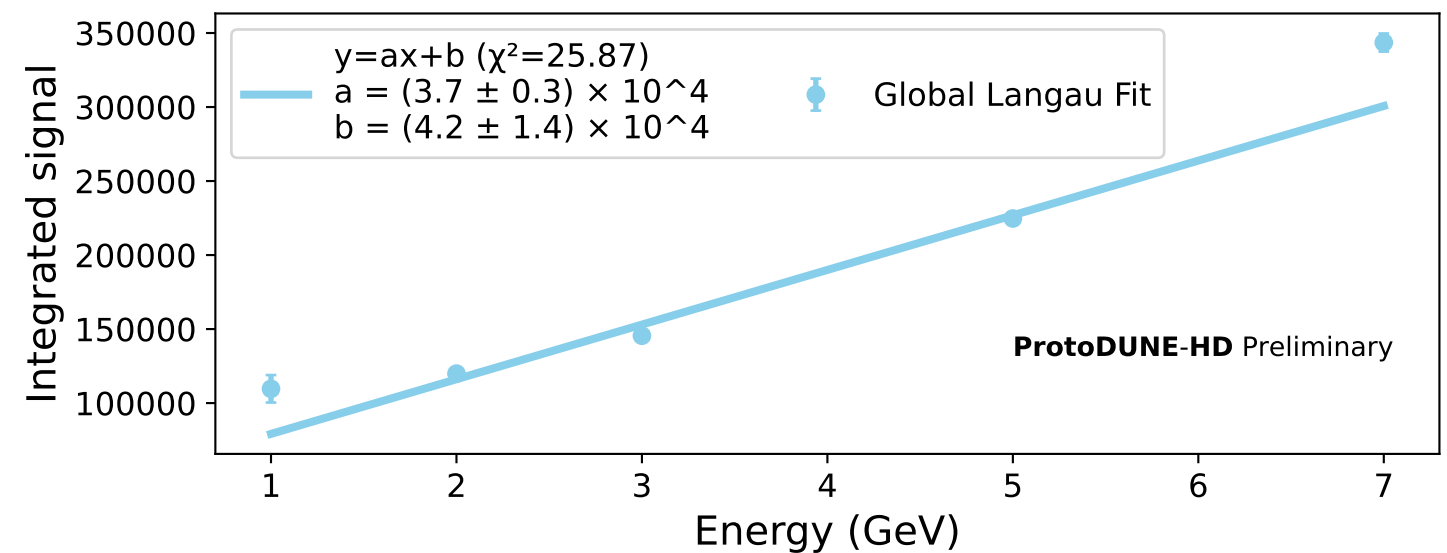
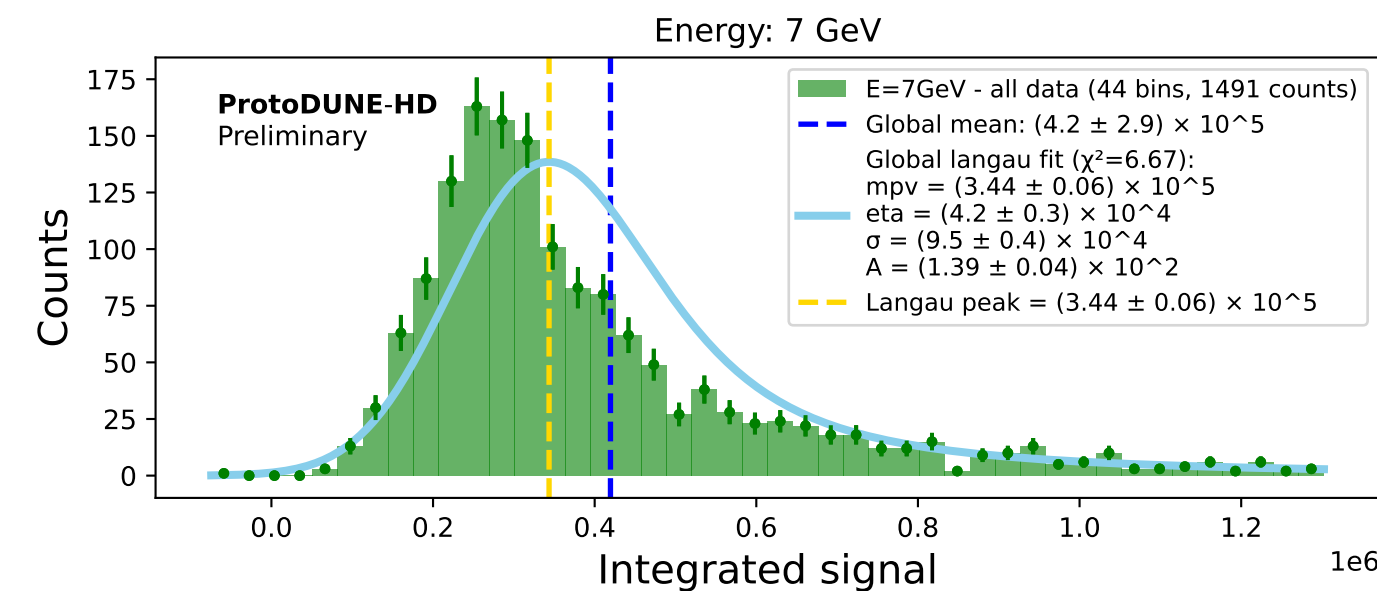
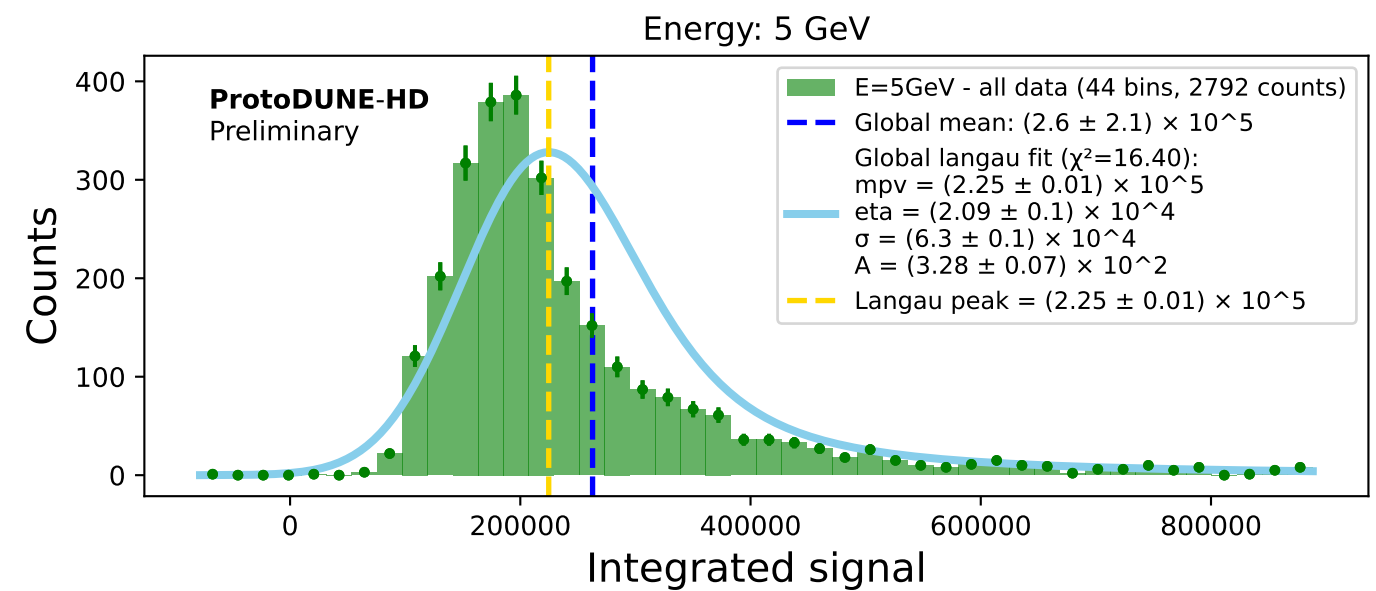
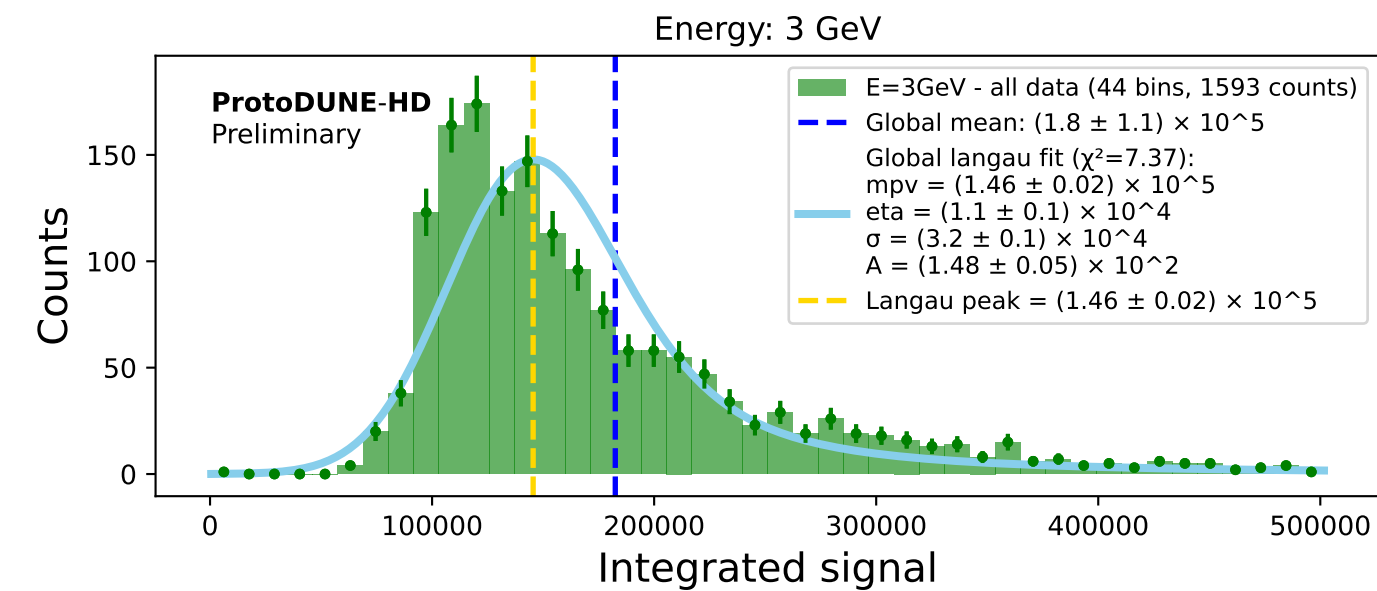
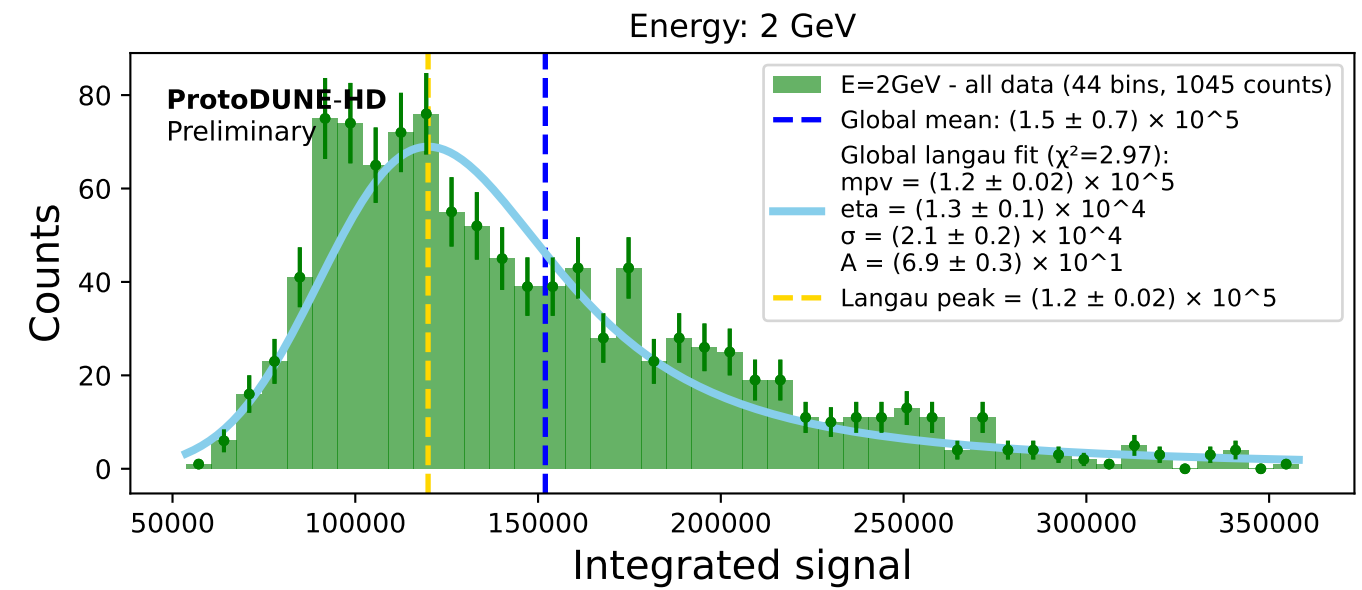
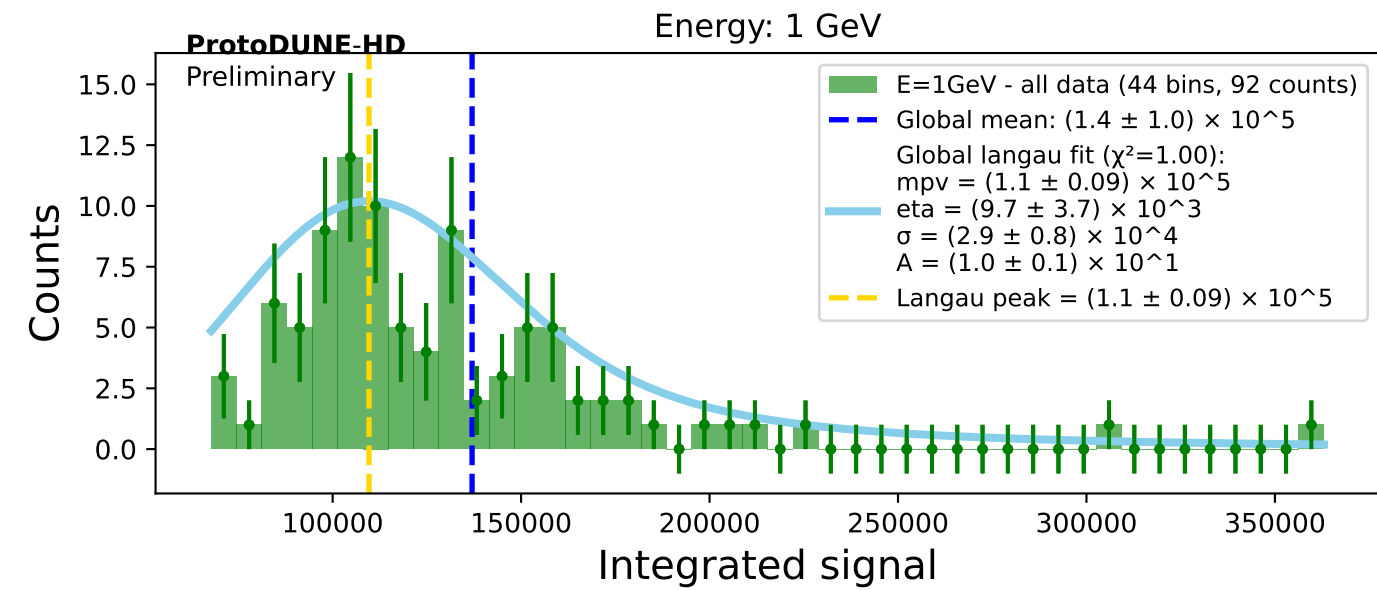
Energy: 5 GeV



Energy: 7 GeV



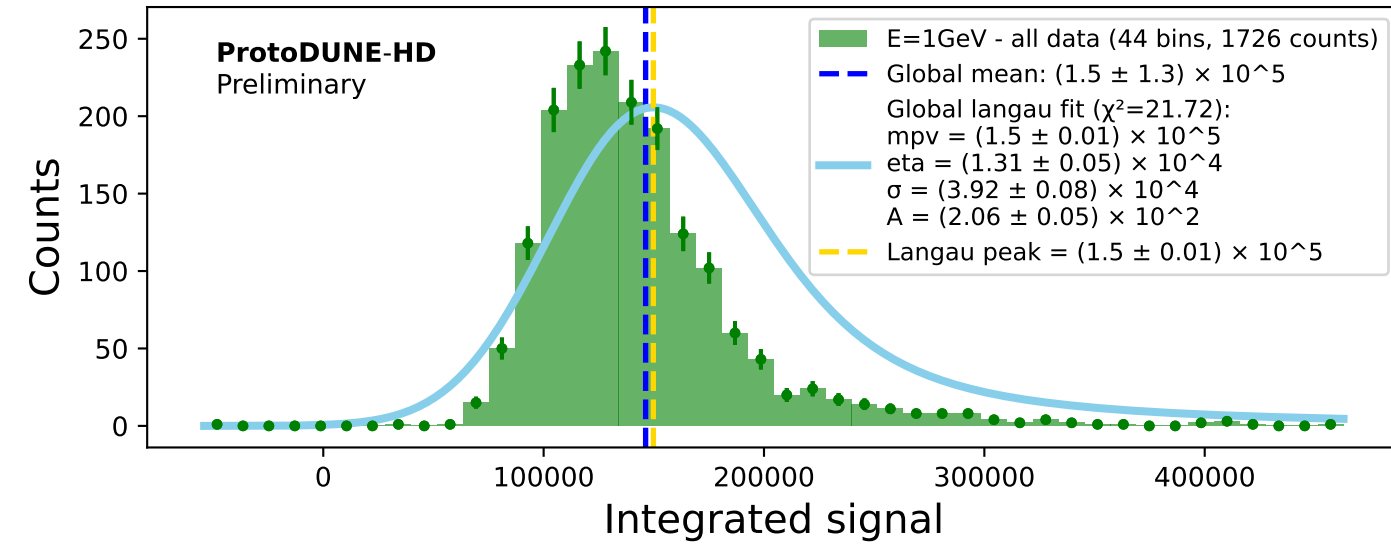
# Endpoint 109 - Channel 36 : Integral Before Analysis - 44 bins



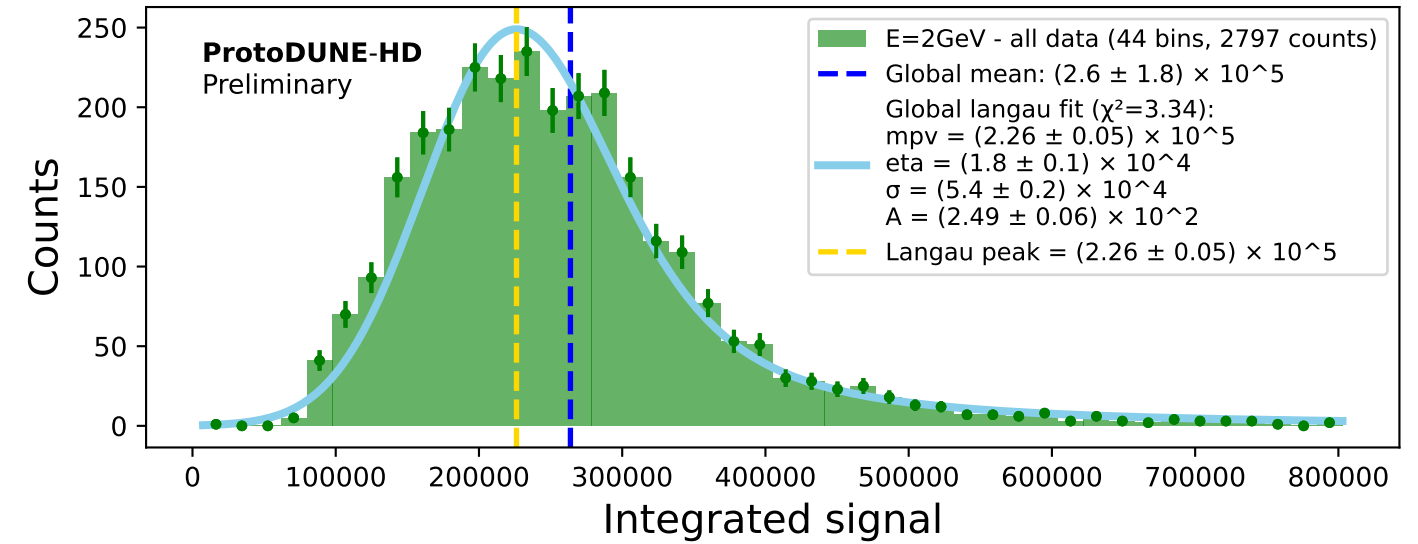


# Endpoint 109 - Channel 37 : Integral Before Analysis - 44 bins

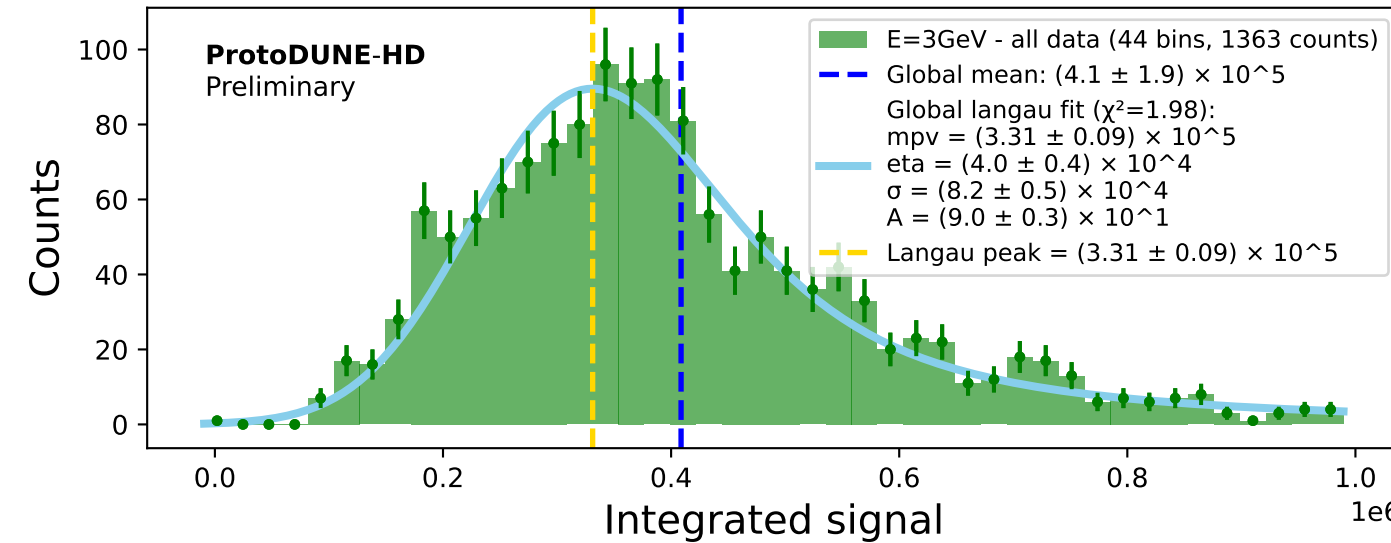
Energy: 1 GeV



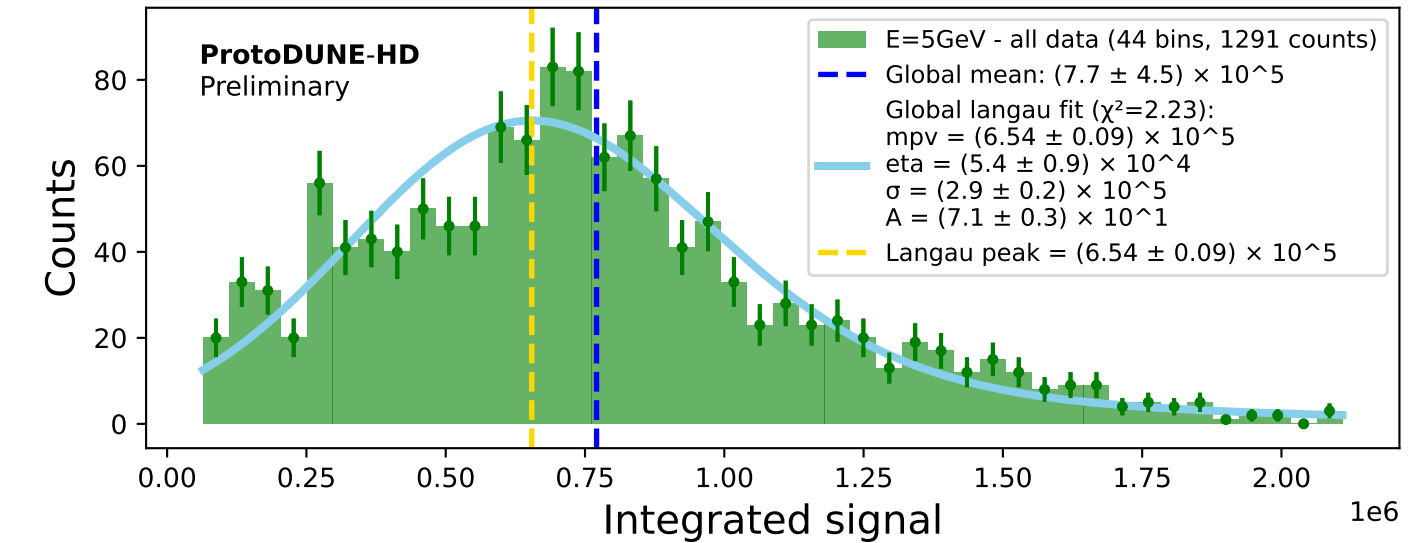
Energy: 2 GeV



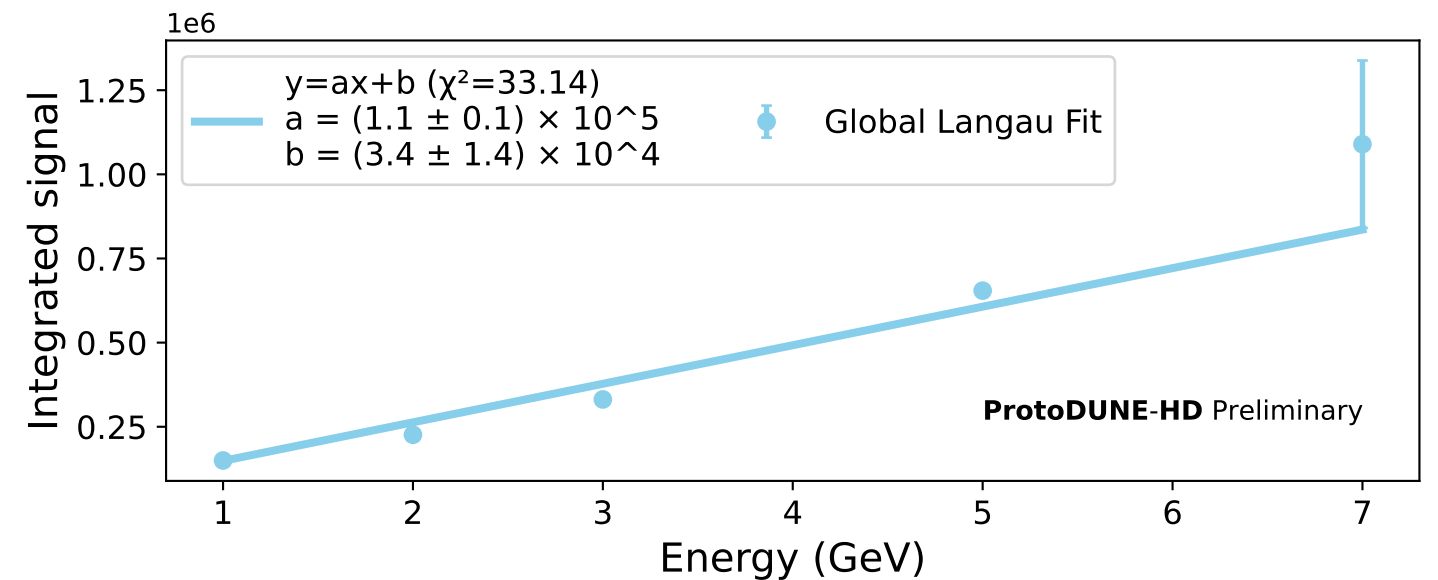
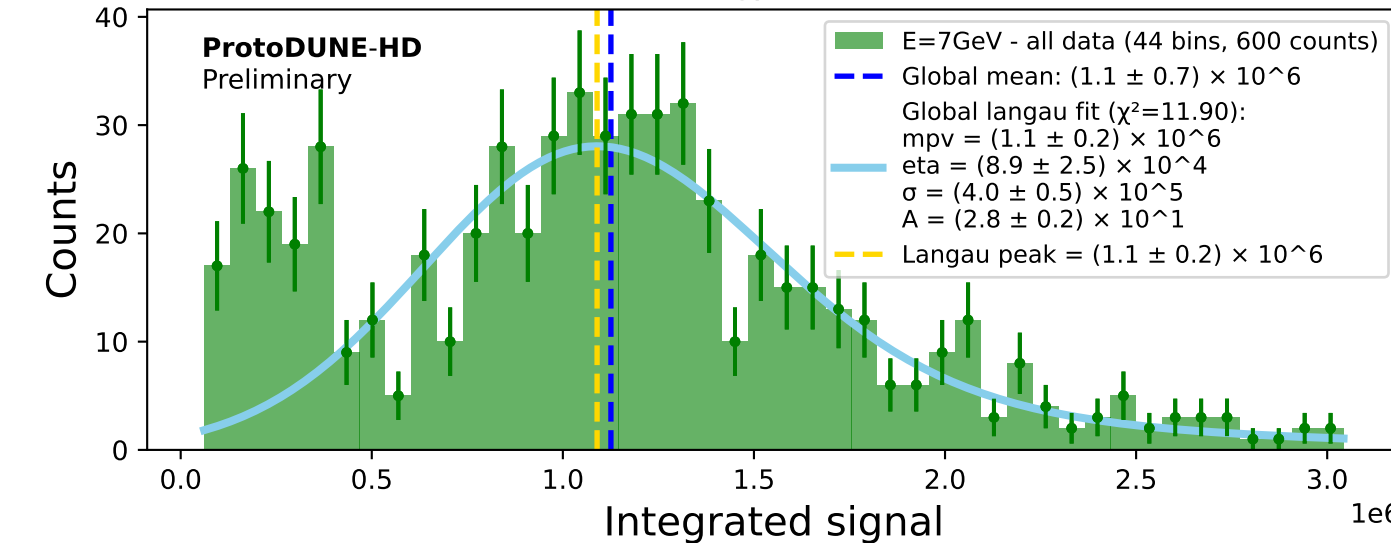
Energy: 3 GeV



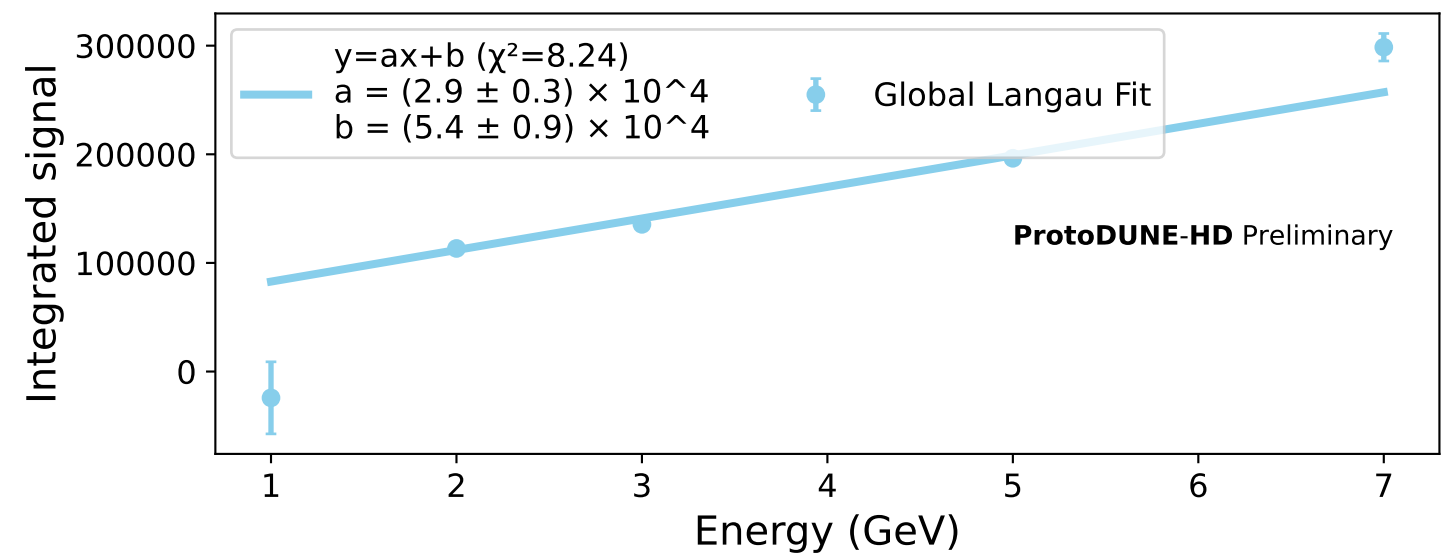
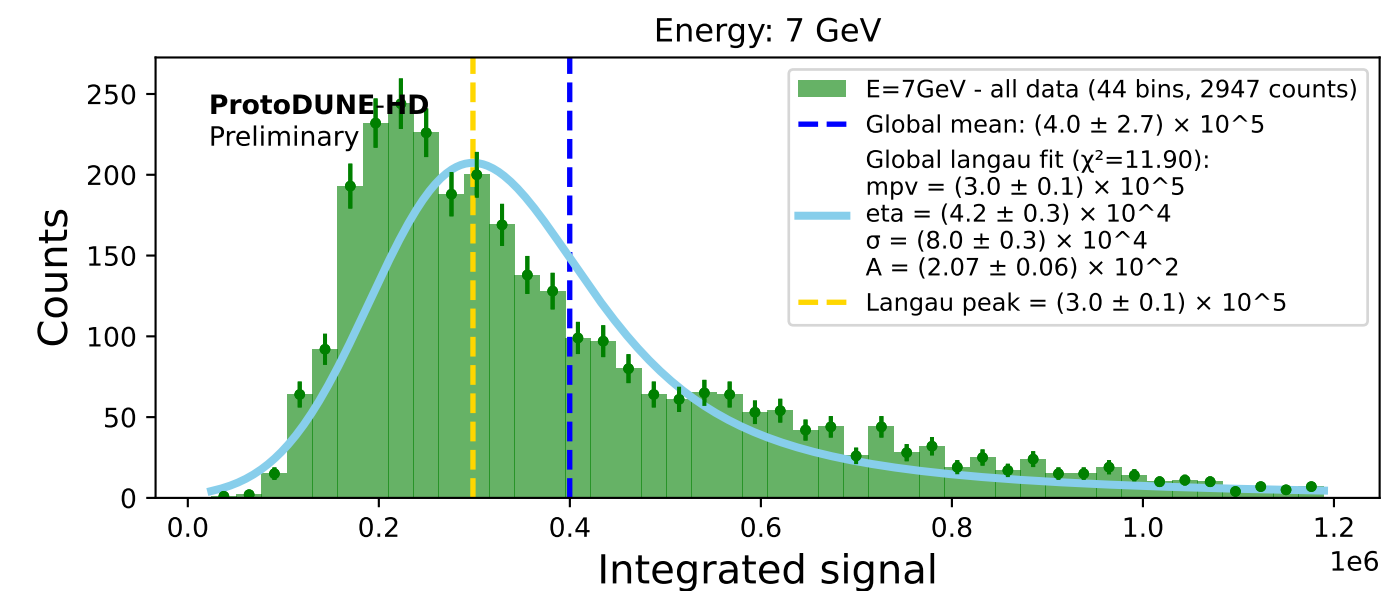
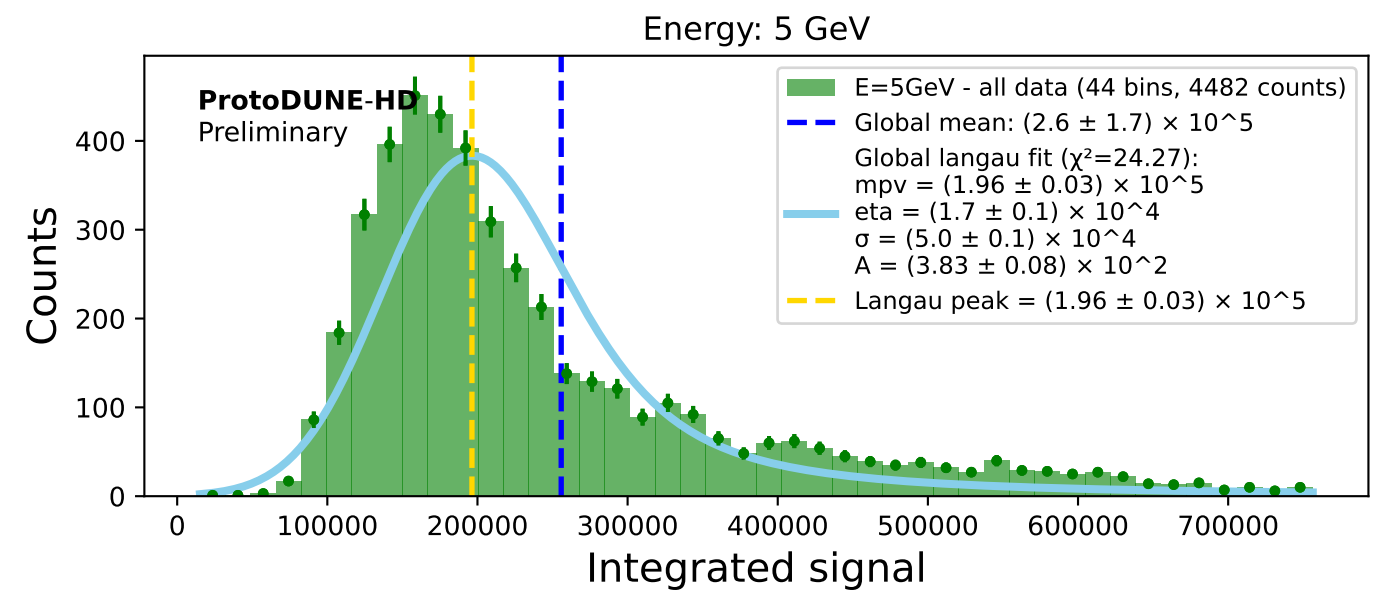
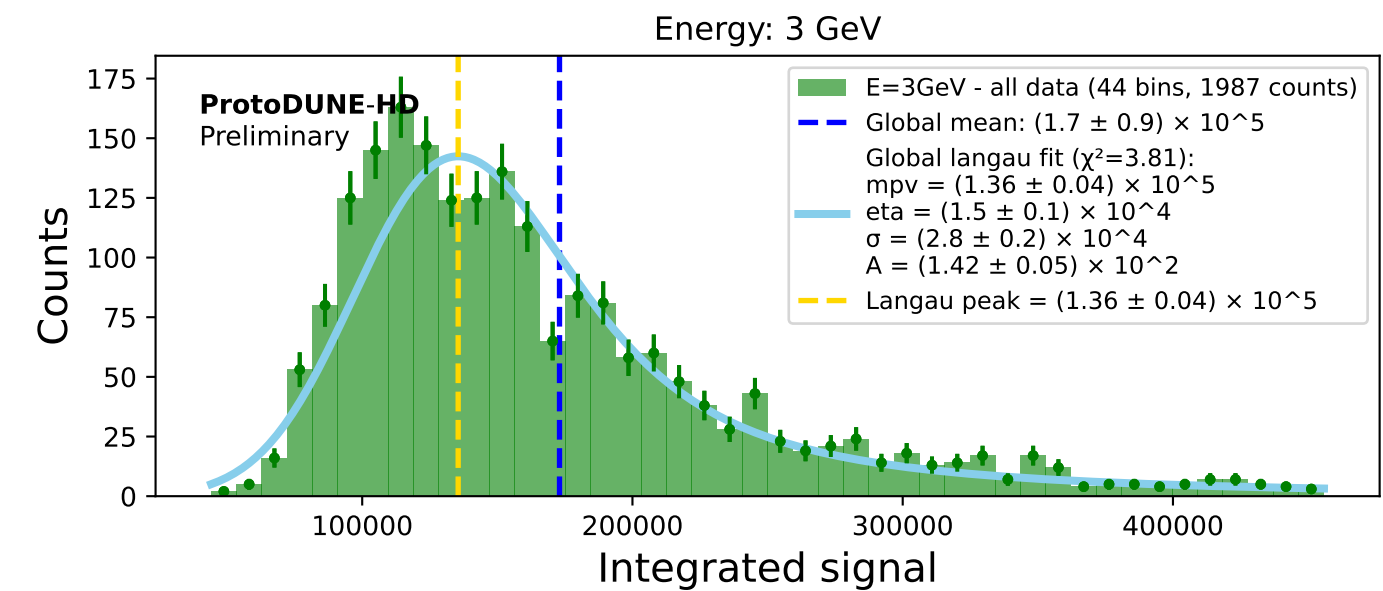
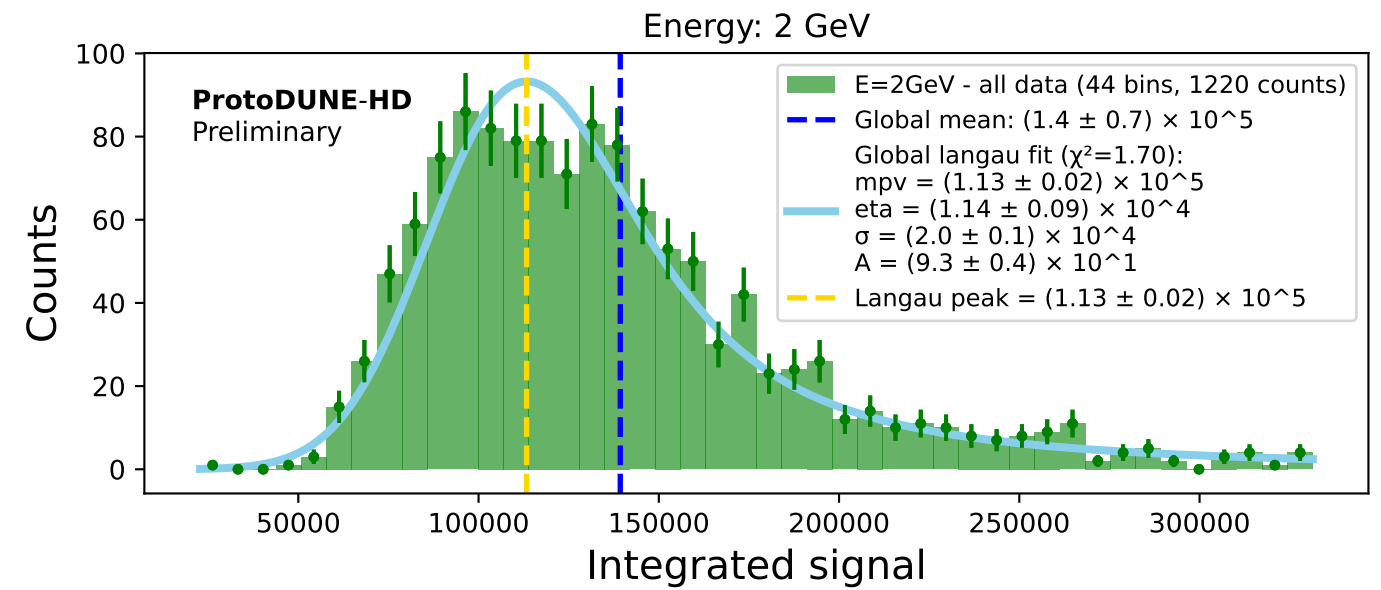
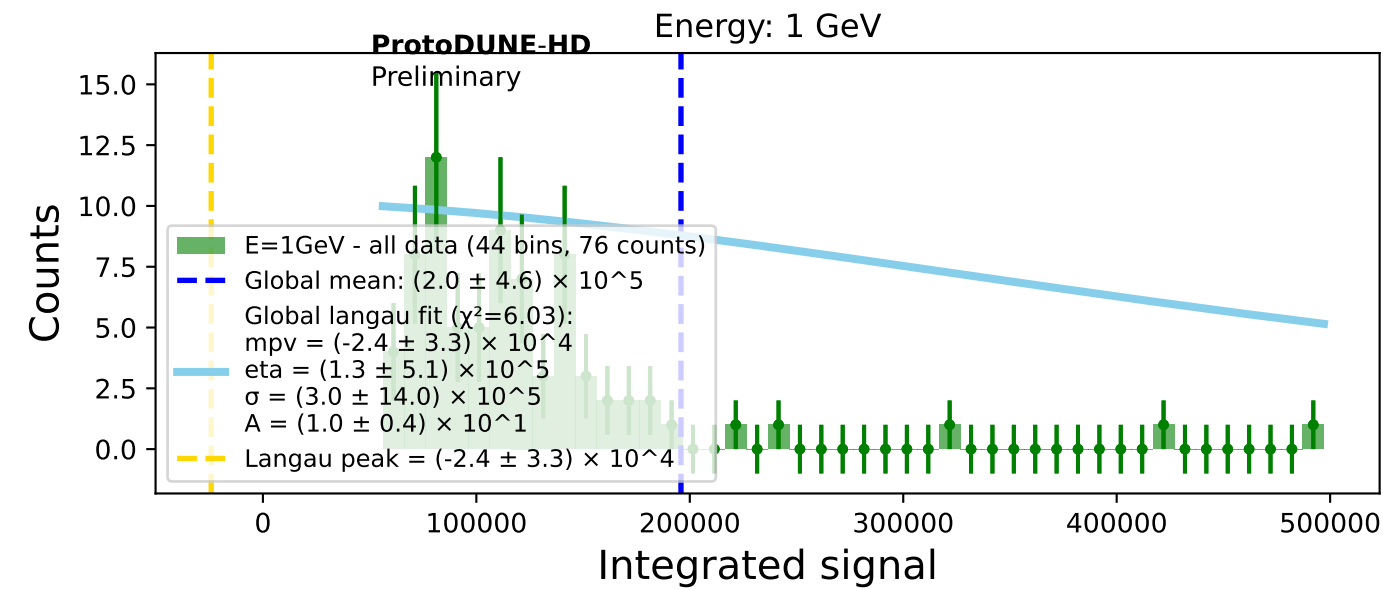
Energy: 5 GeV



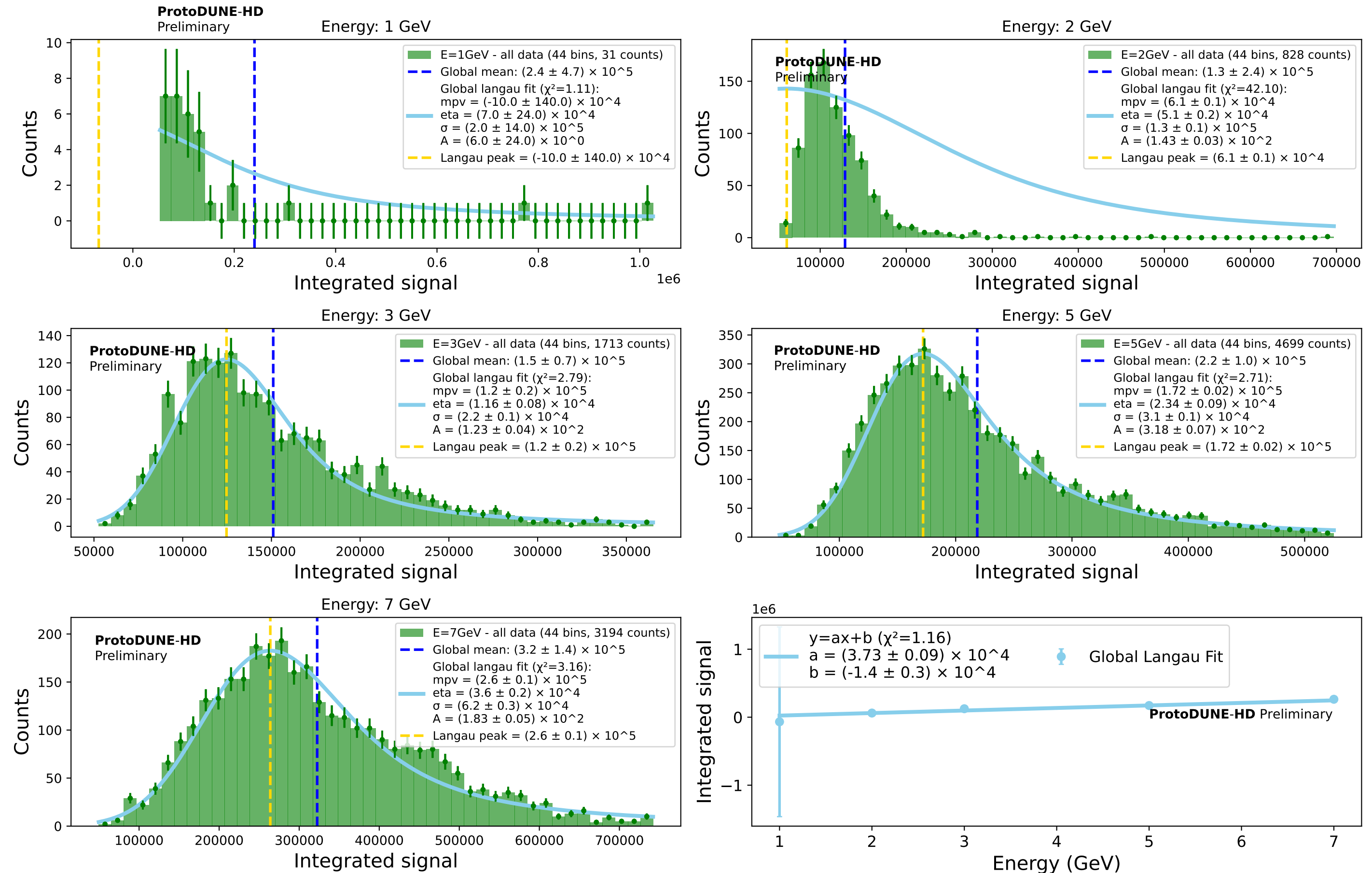
Energy: 7 GeV



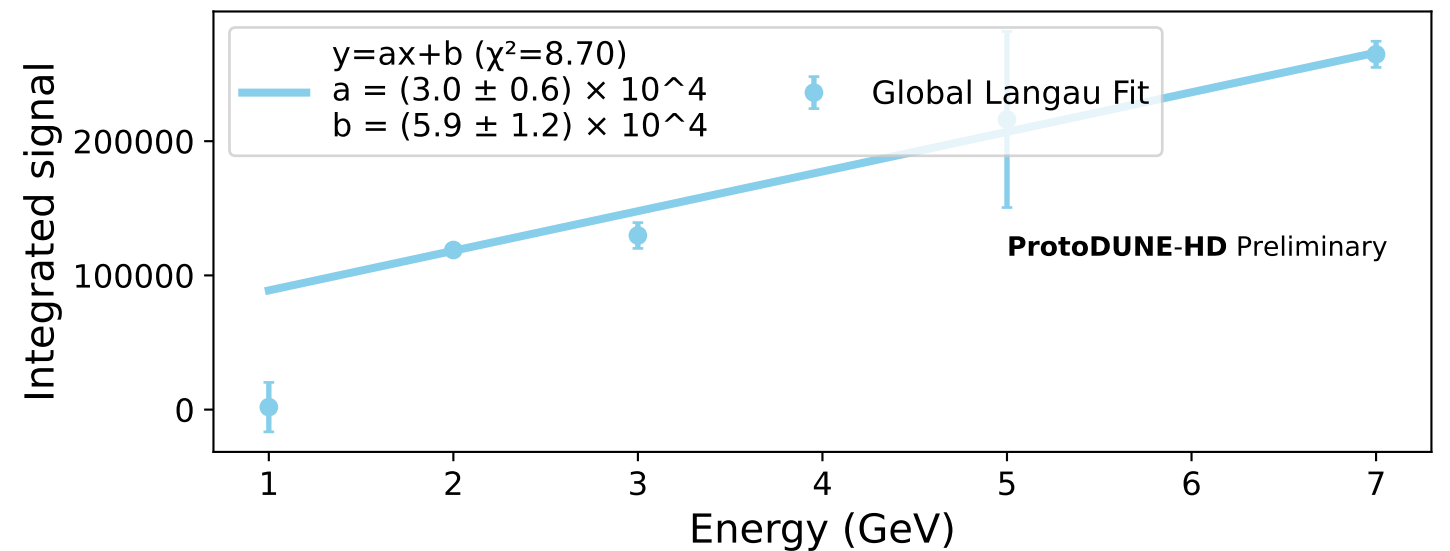
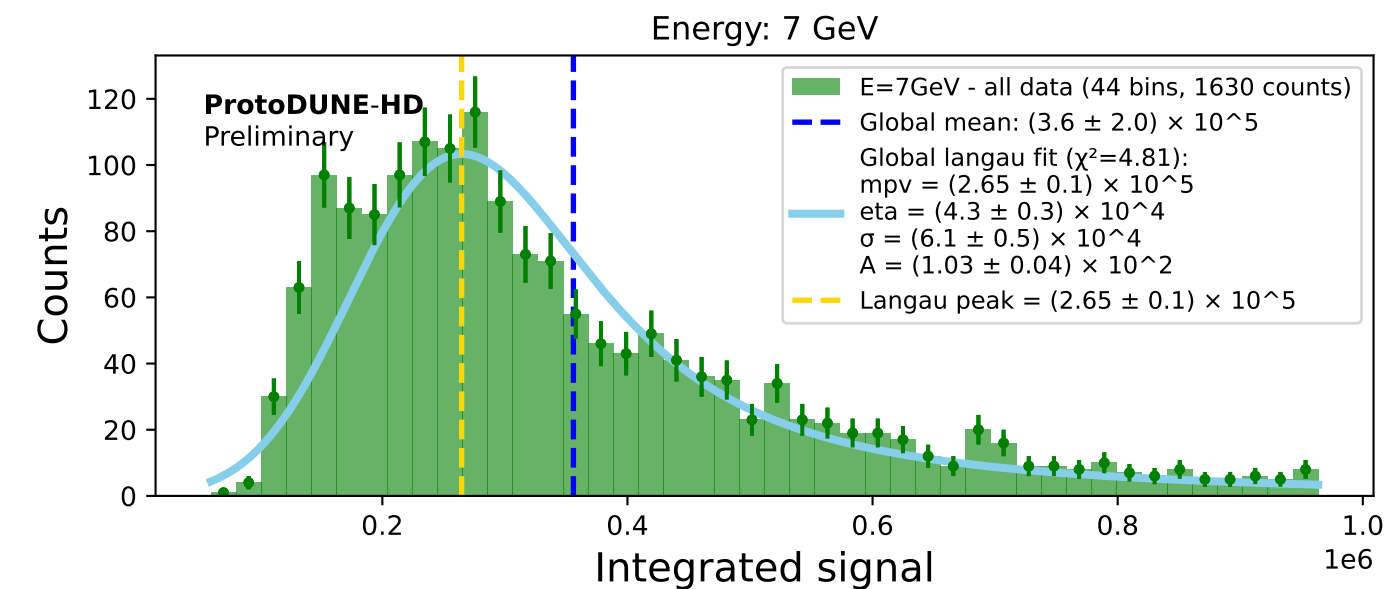
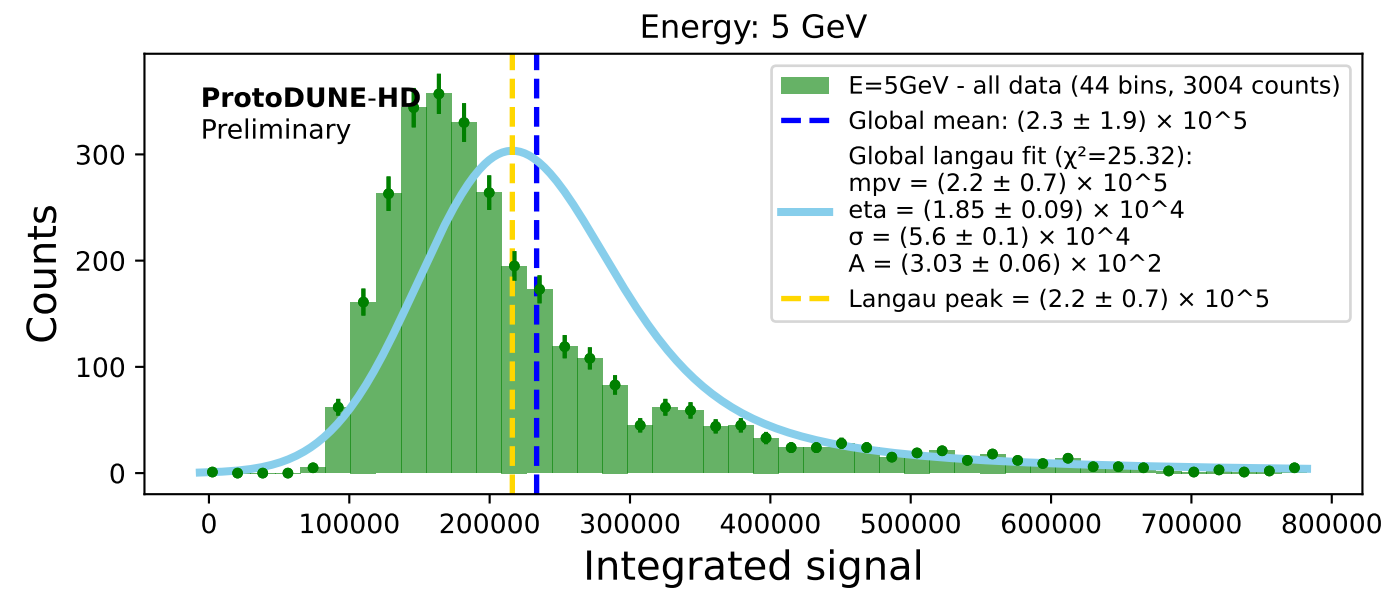
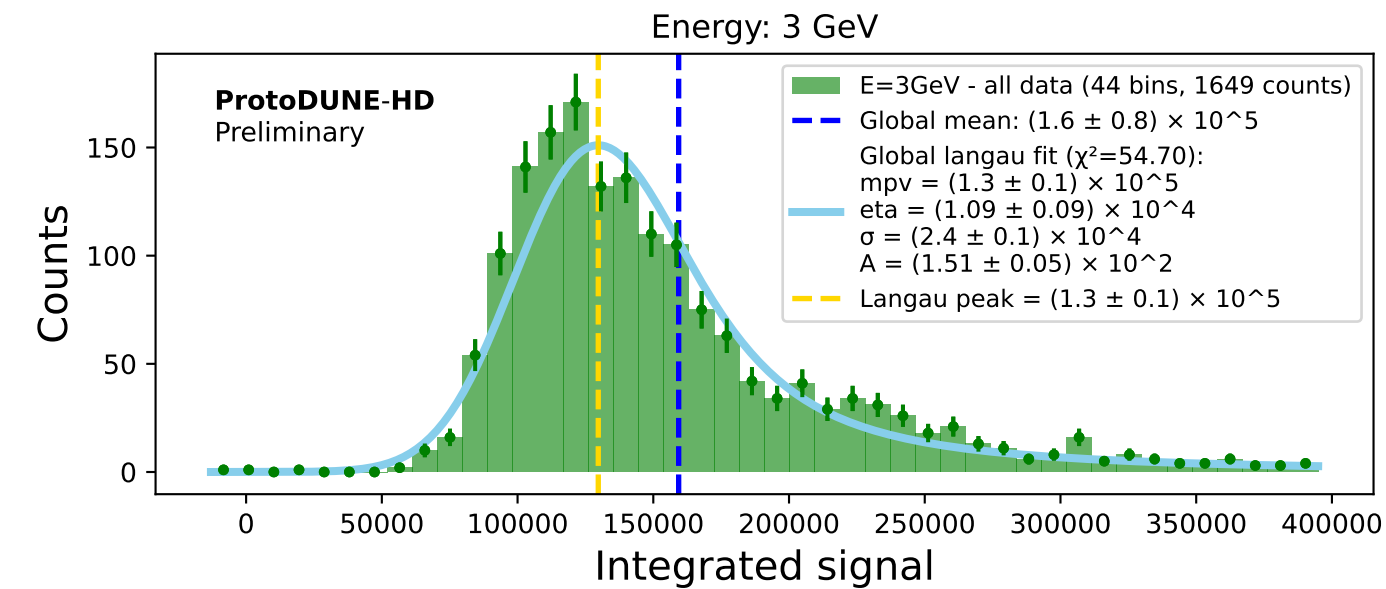
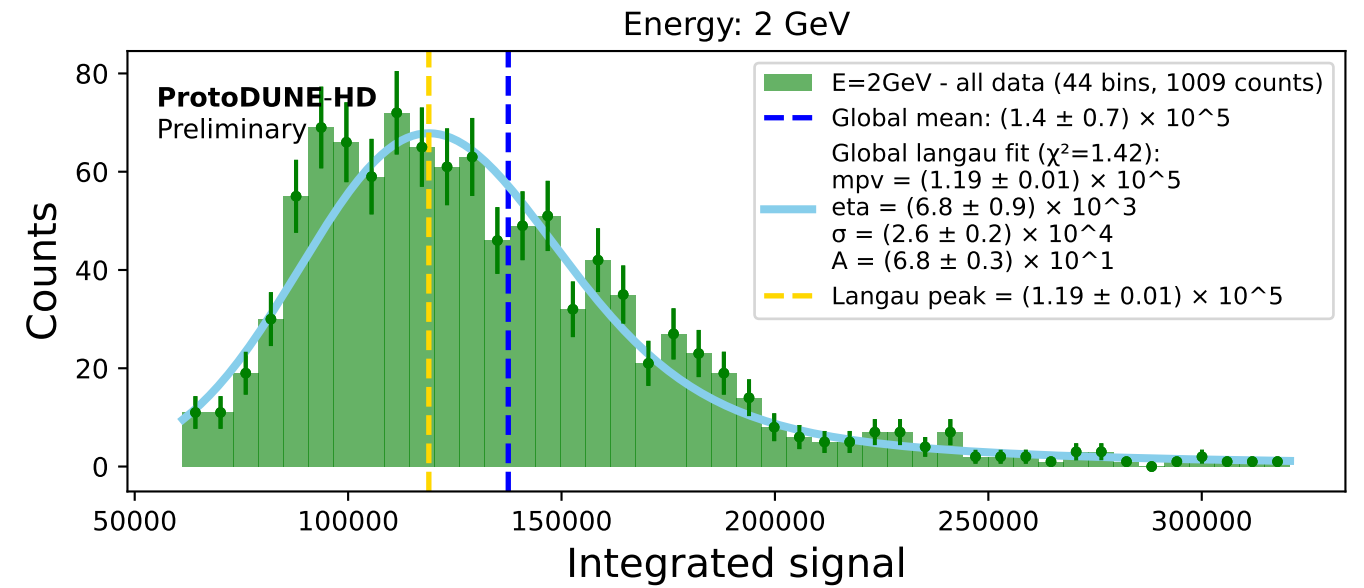
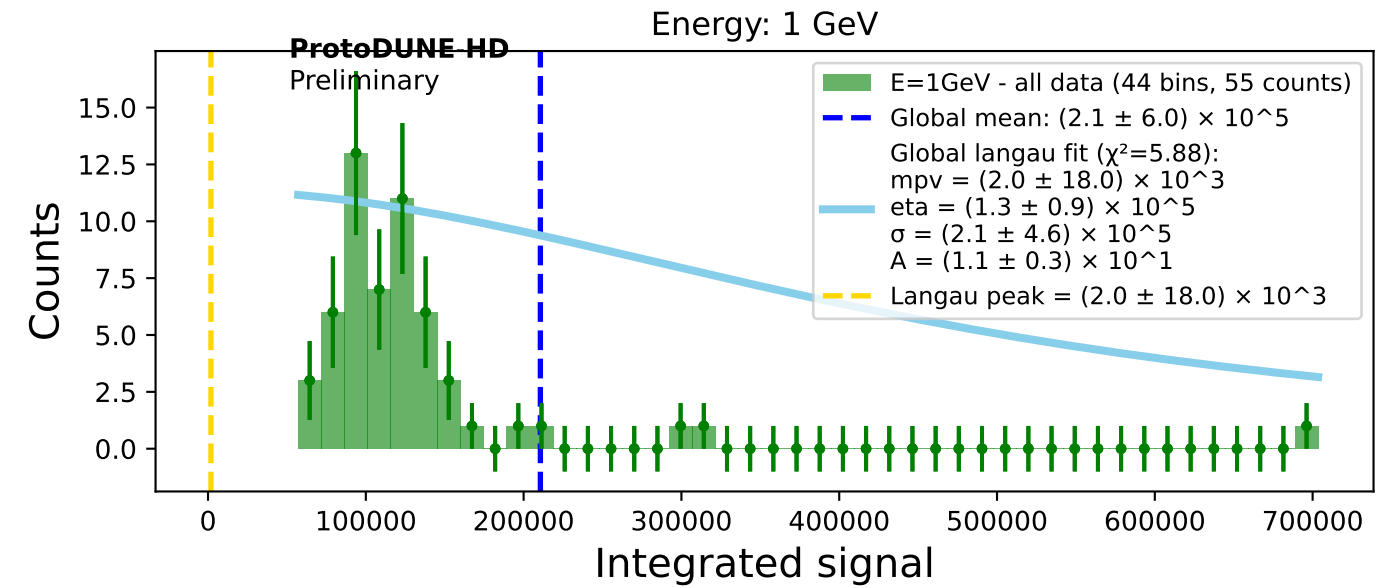
# Endpoint 109 - Channel 40 : Integral Before Analysis - 44 bins



# Endpoint 109 - Channel 41 : Integral Before Analysis - 44 bins

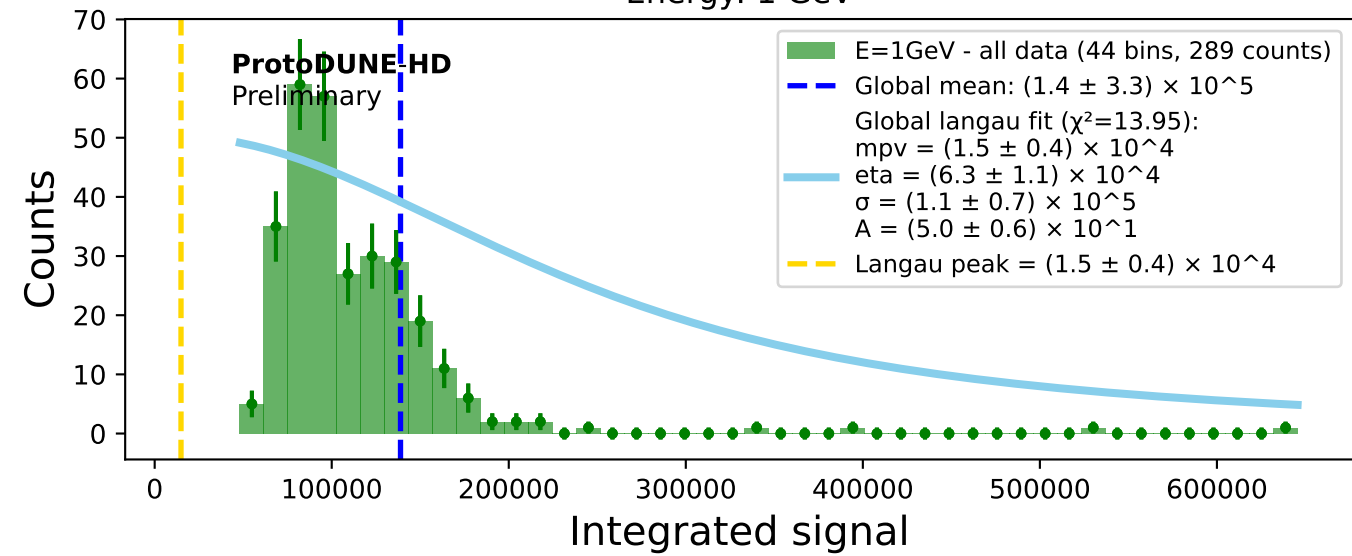


# Endpoint 109 - Channel 42 : Integral Before Analysis - 44 bins

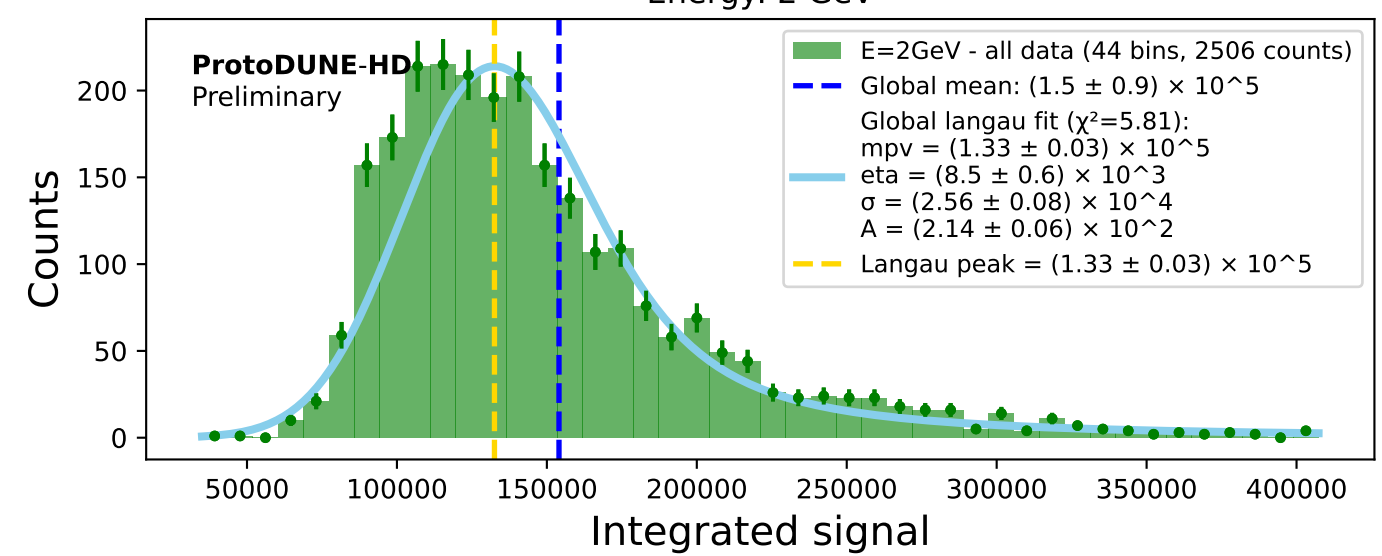


# Endpoint 109 - Channel 45 : Integral Before Analysis - 44 bins

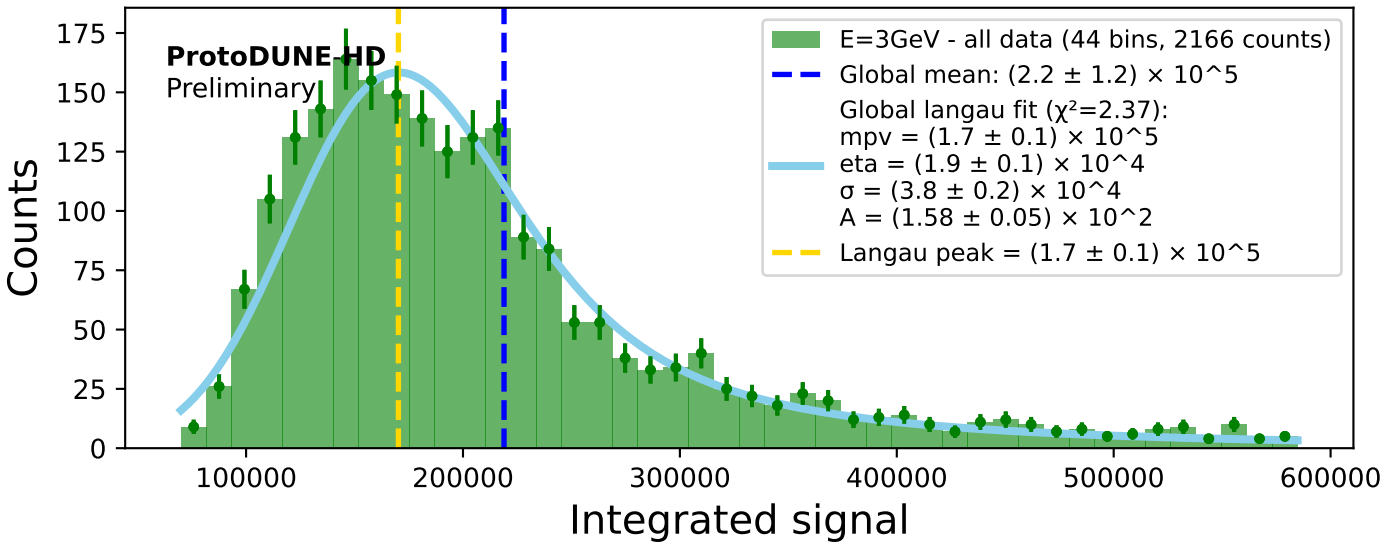
Energy: 1 GeV



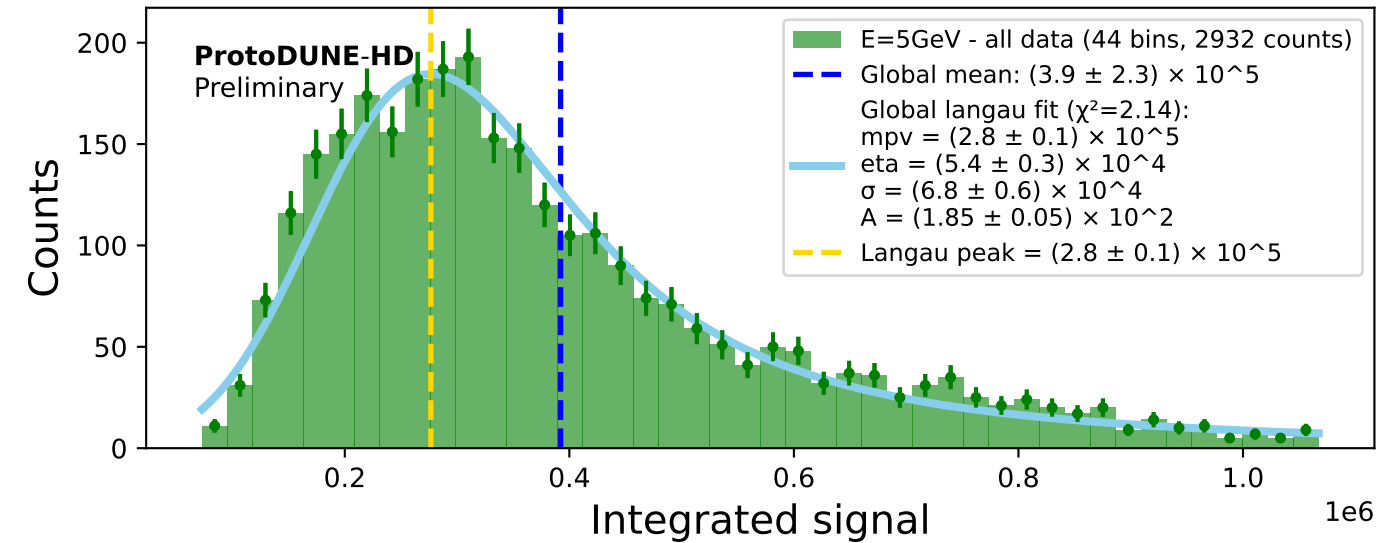
Energy: 2 GeV



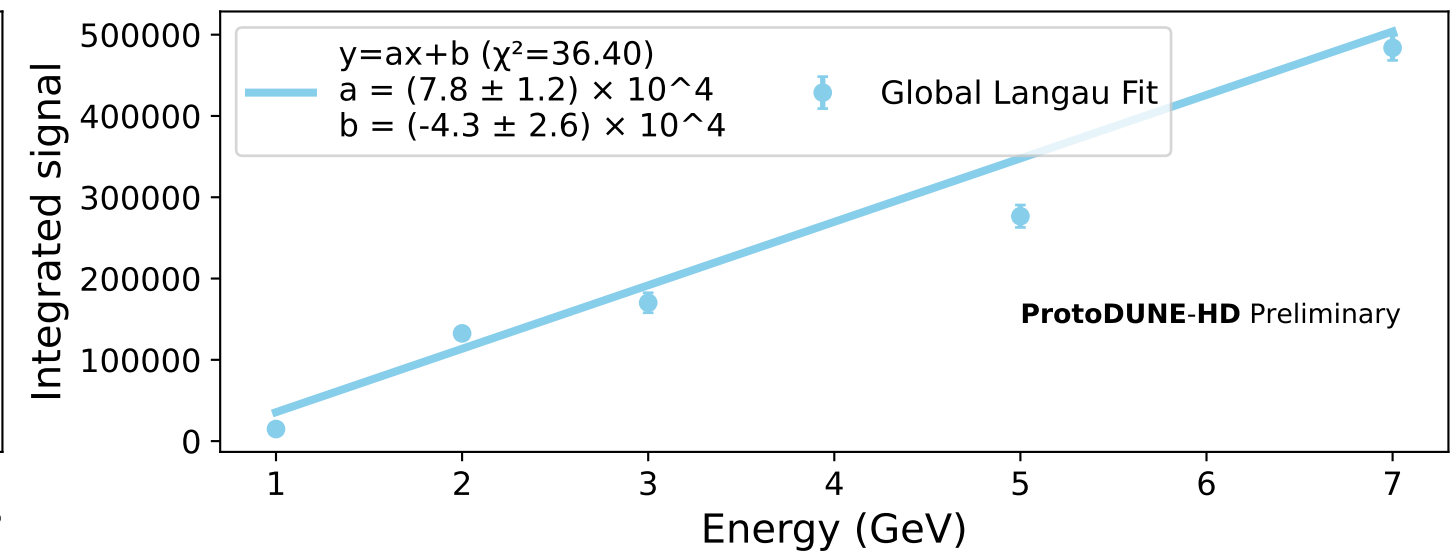
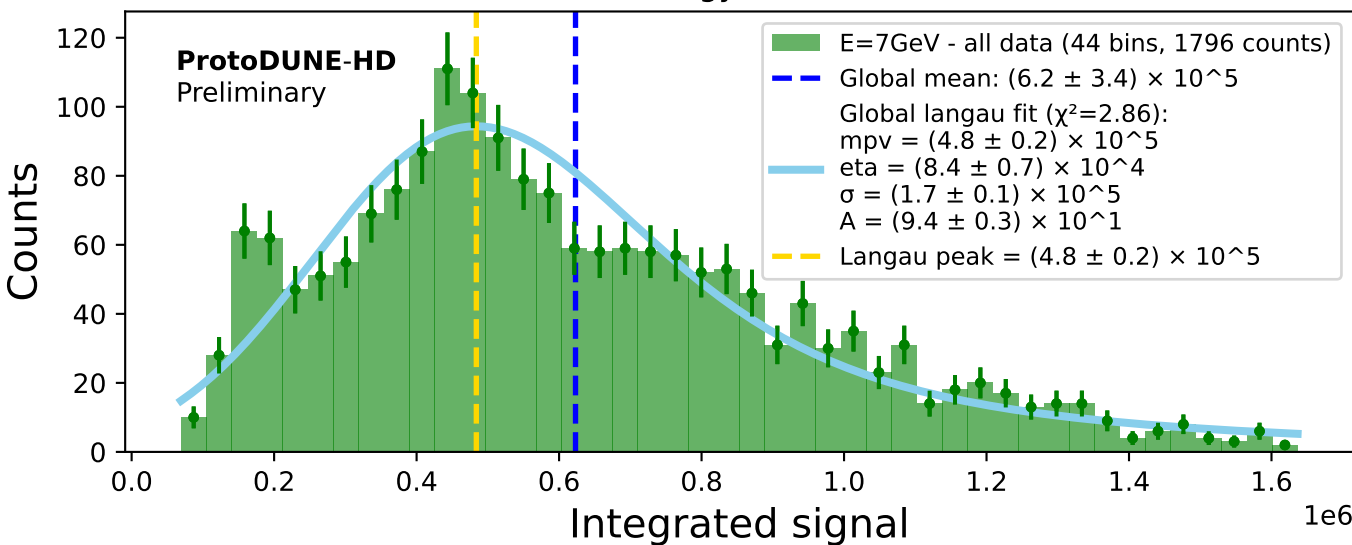
Energy: 3 GeV



Energy: 5 GeV



Energy: 7 GeV

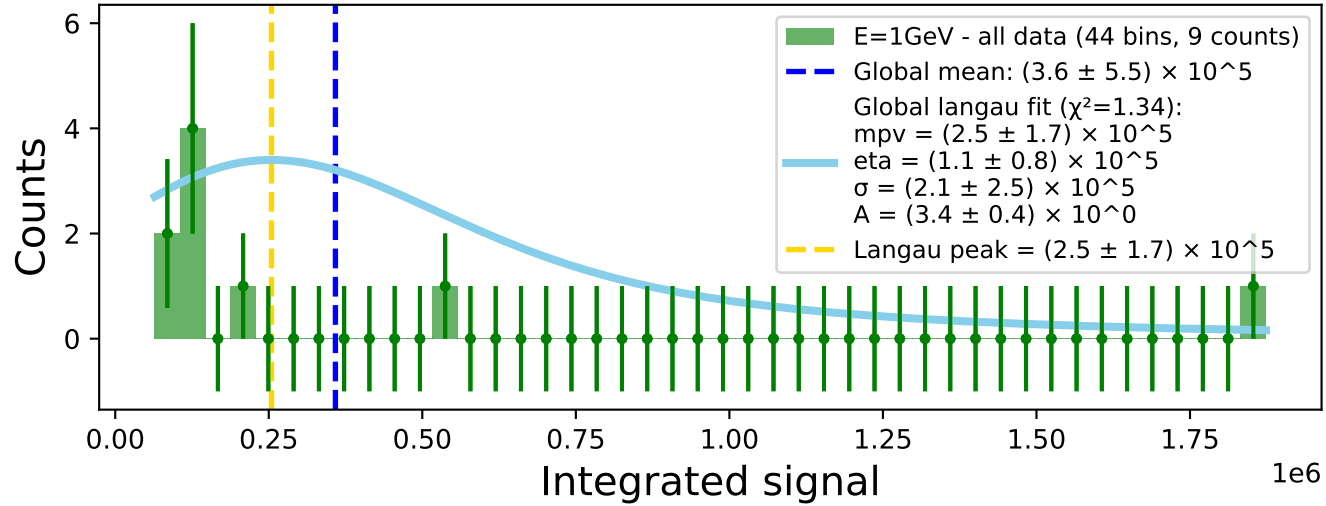




# Endpoint 109 - Channel 46 : Integral Before Analysis - 44 bins

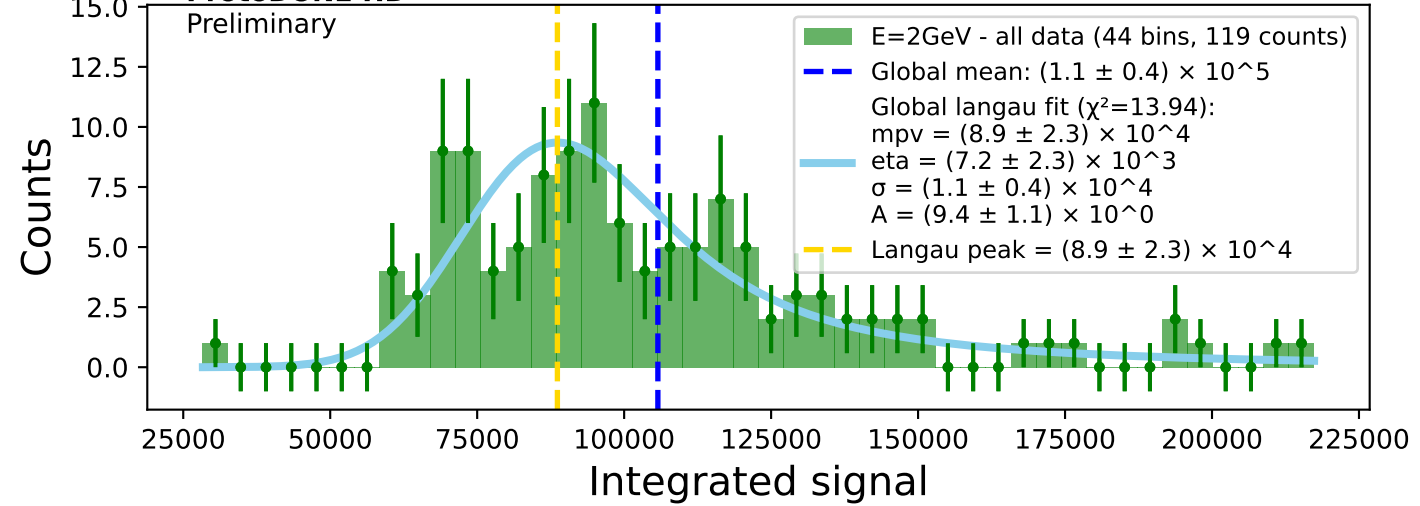
**ProtoDUNE-HD**  
Preliminary

Energy: 1 GeV

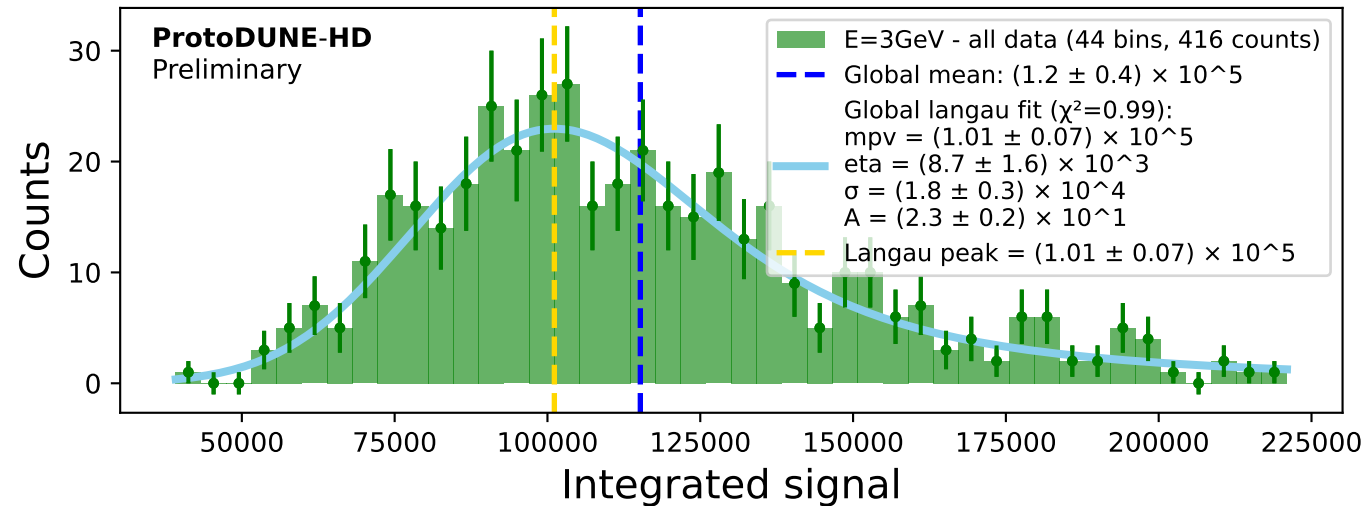


**ProtoDUNE-HD**  
Preliminary

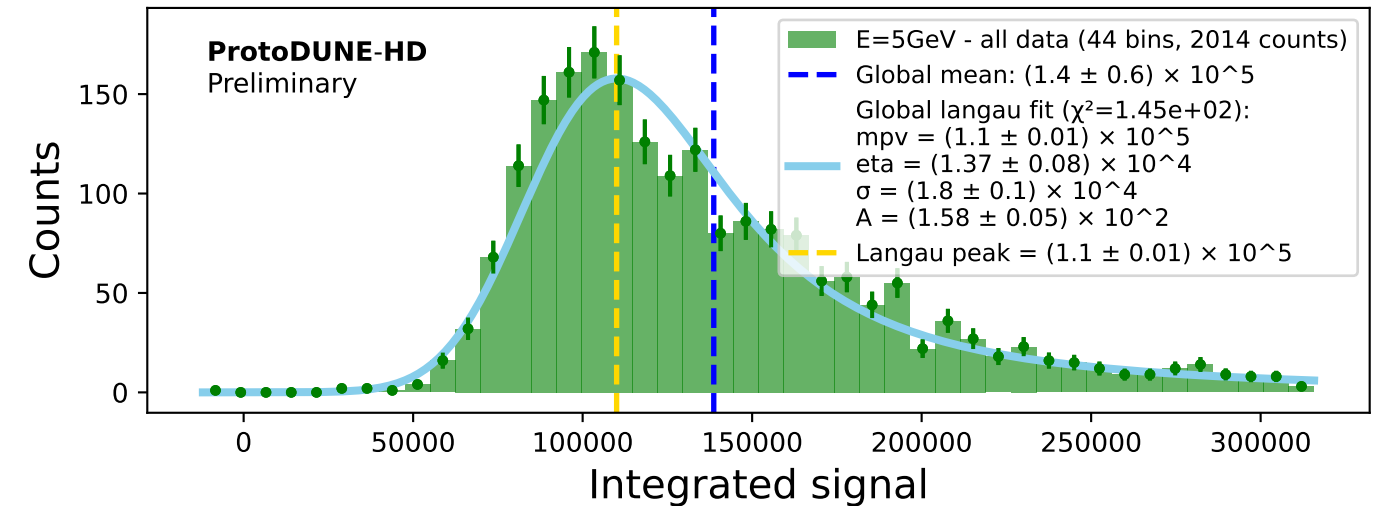
Energy: 2 GeV



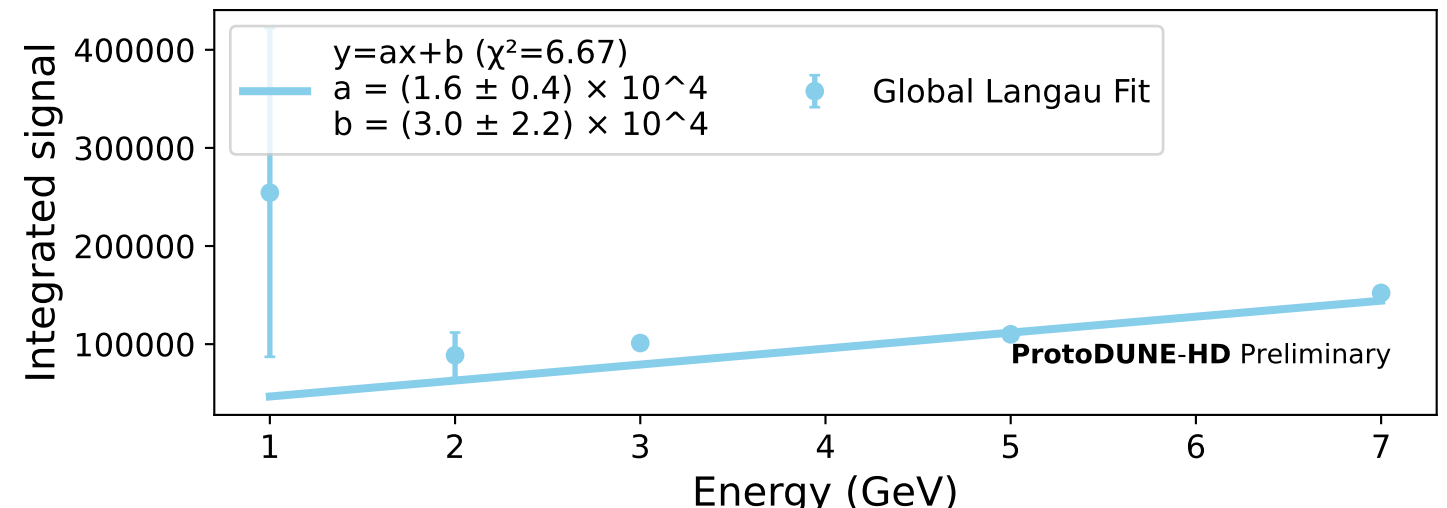
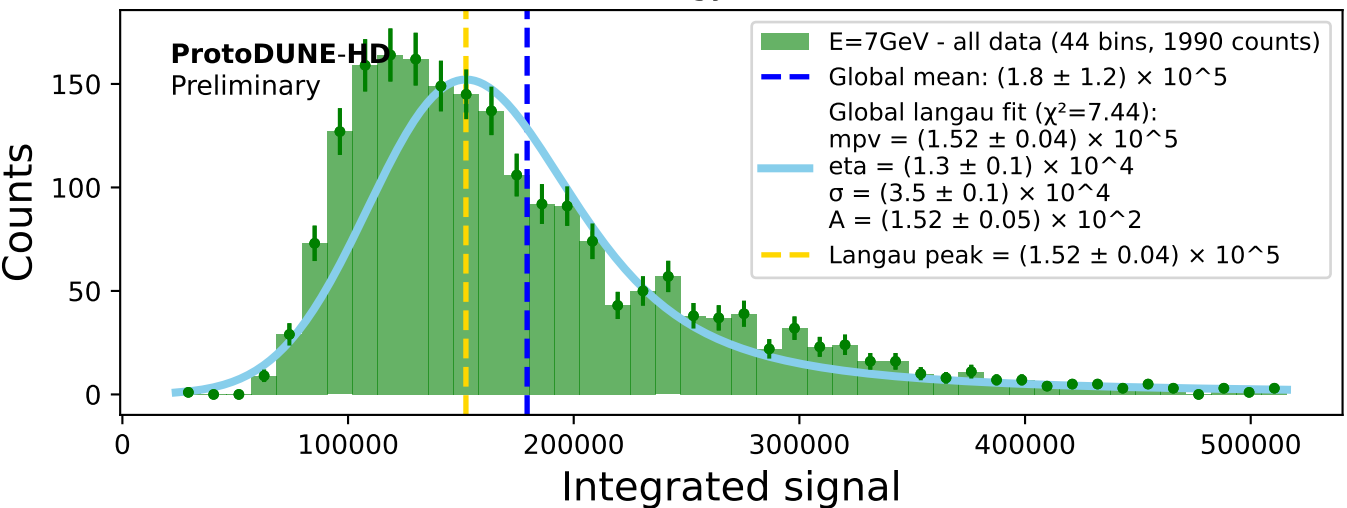
Energy: 3 GeV



Energy: 5 GeV



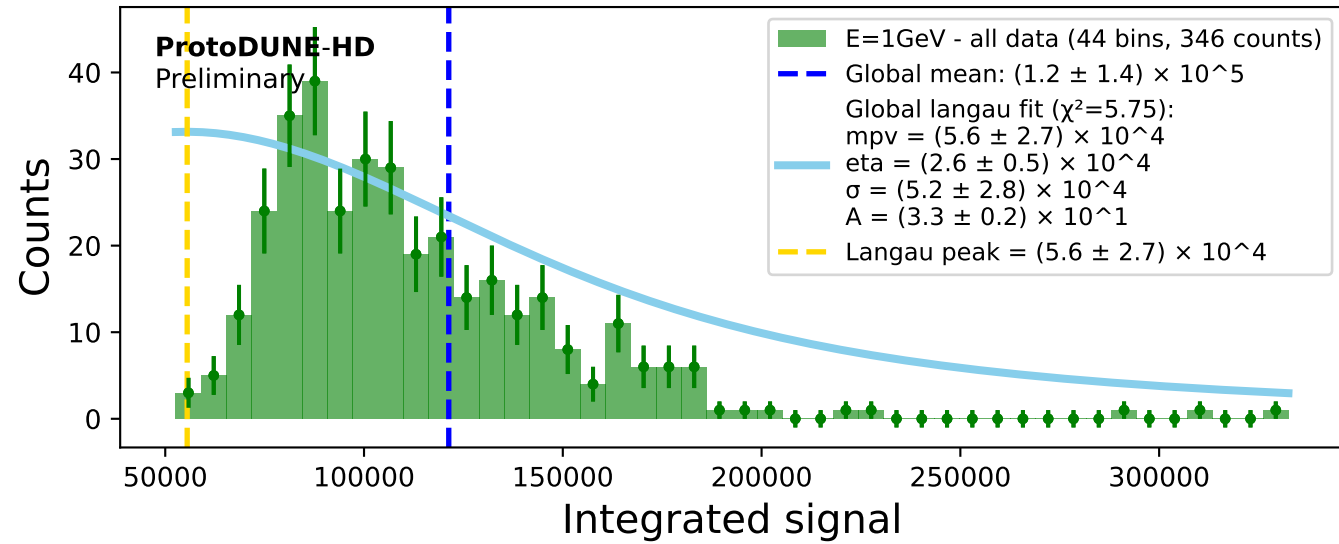
Energy: 7 GeV



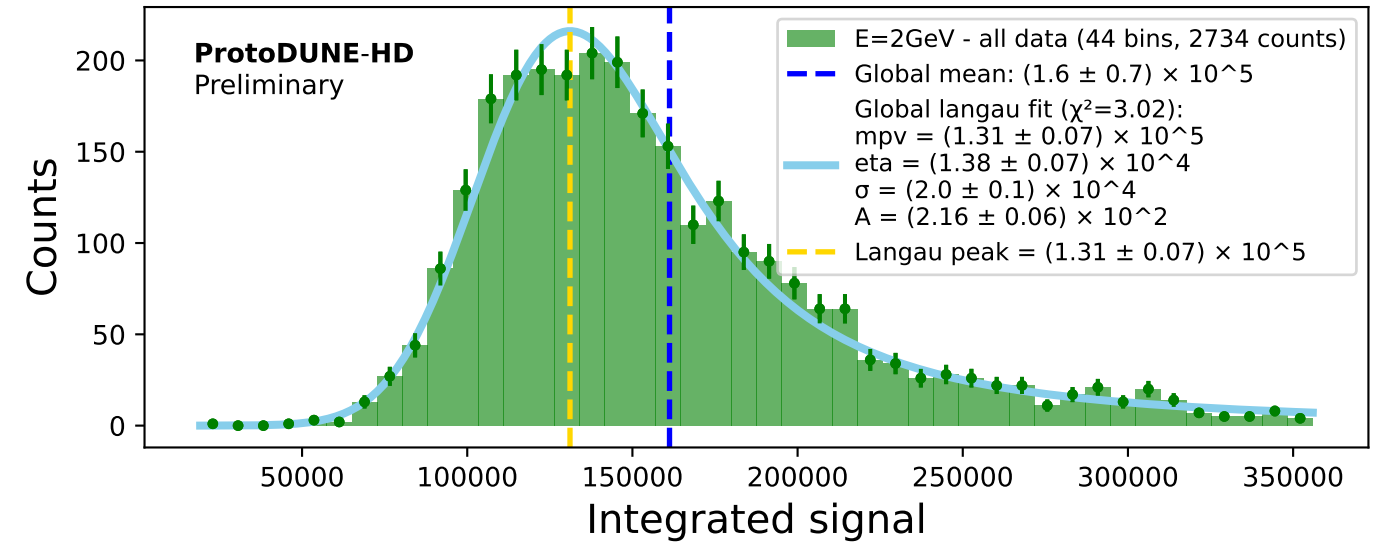


# Endpoint 109 - Channel 47 : Integral Before Analysis - 44 bins

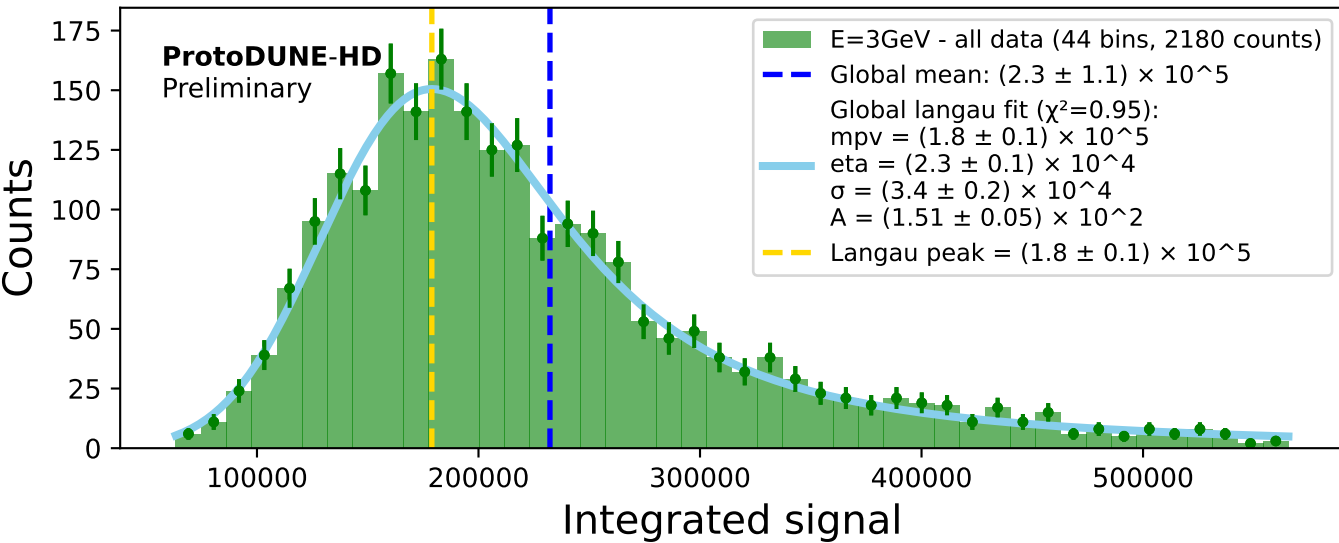
Energy: 1 GeV



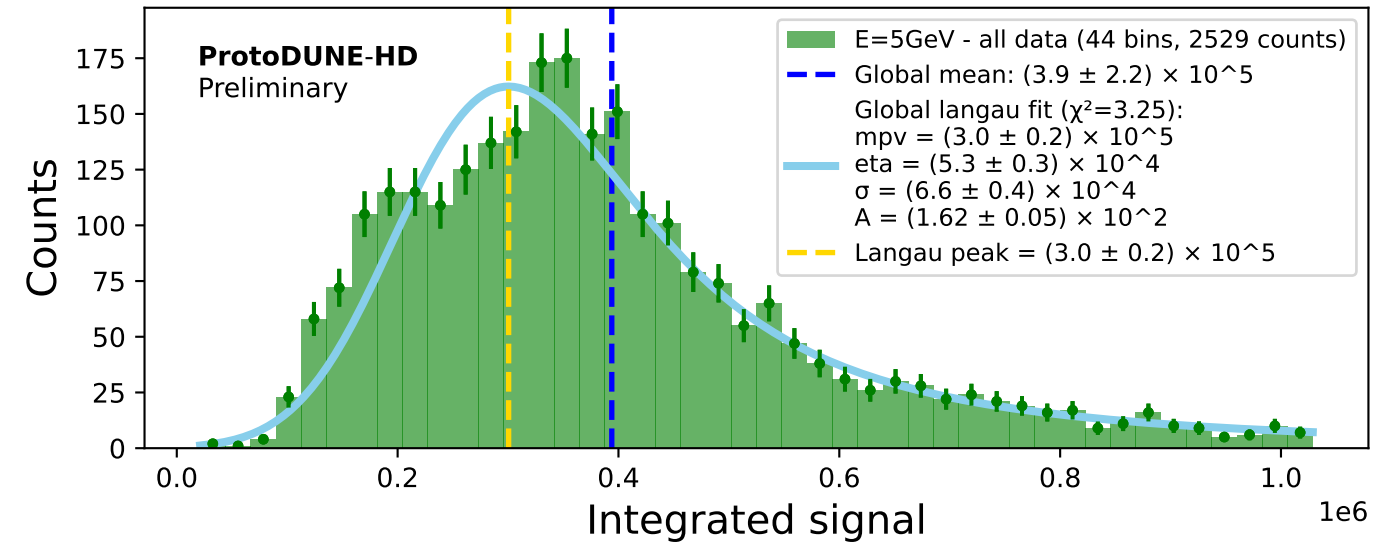
Energy: 2 GeV



Energy: 3 GeV



Energy: 5 GeV



Energy: 7 GeV

