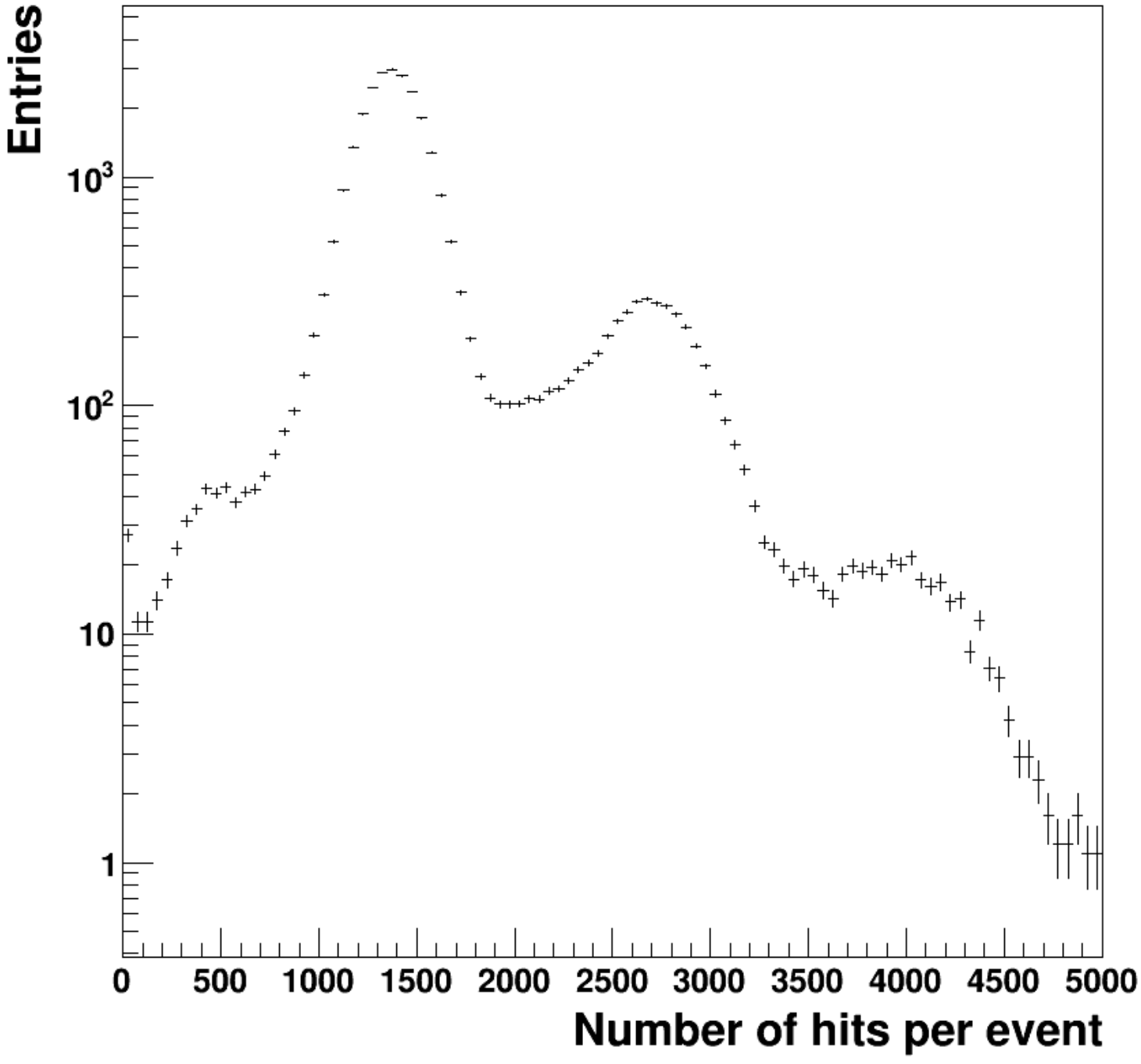
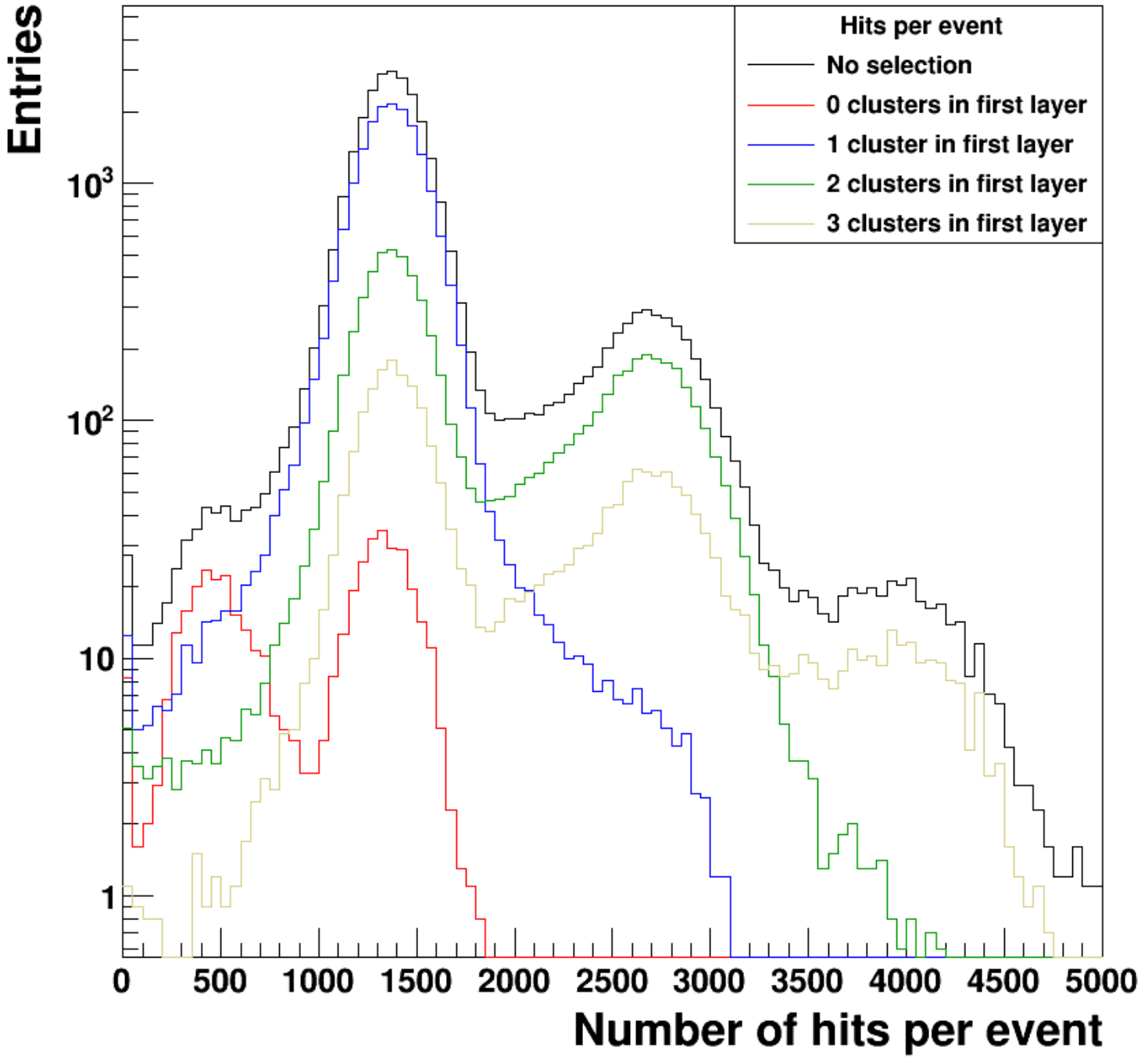
Run 1308 – 5 GeV

- Different peaks due to different number of electrons producing a shower.
- Goal: Make selection criteria to select events with only 1 electron or only 2 electrons etc.



Run 1308 – 5 GeV

- Goal: Make selection criteria to select events with only 1 electron or only 2 electrons etc.
- First criterion: Selection based on number of clusters in first layer

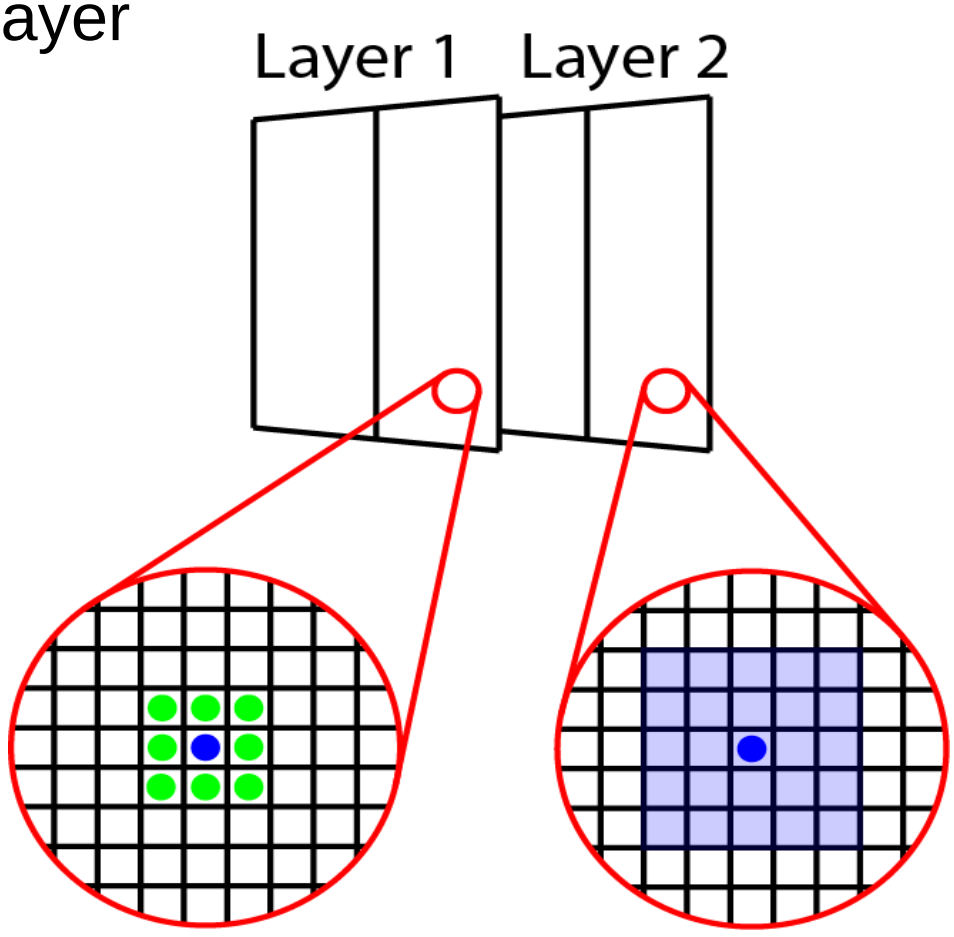


Run 1308 – 5 GeV

- First criterion: Selection based on number of clusters in first layer

- Second criterion: Look in second layer **behind** the clusters.
  - Hit found? Cluster is accepted
  - No hit found? Cluster is ignored

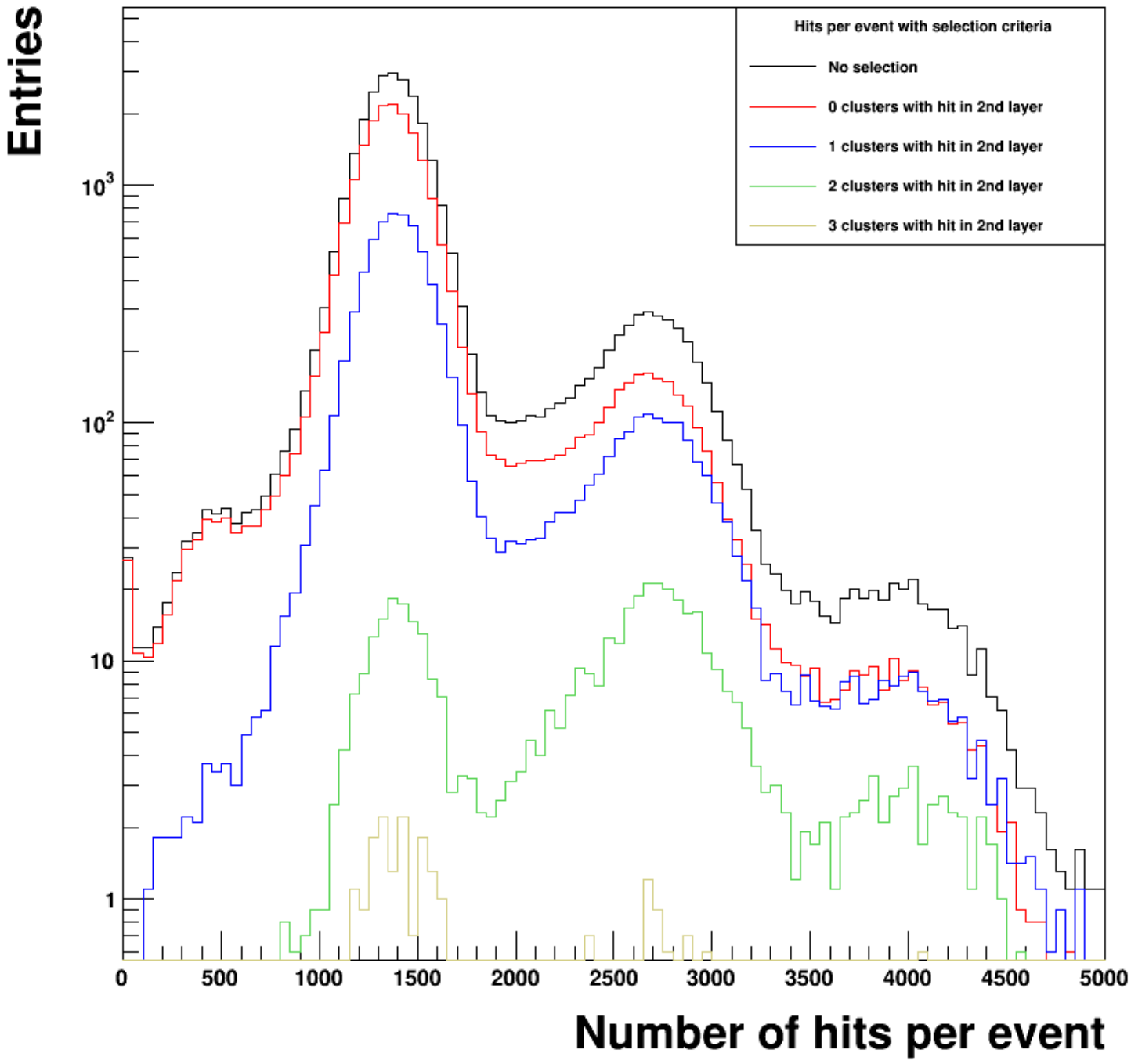
- To find optimal settings this is tested with:
  - Clusters with minimal 1 hit and clusters with minimal 2 hits
  - Different amounts of pixels in search areas in second layer



Run 1308 – 5 GeV

Search area = 5X5

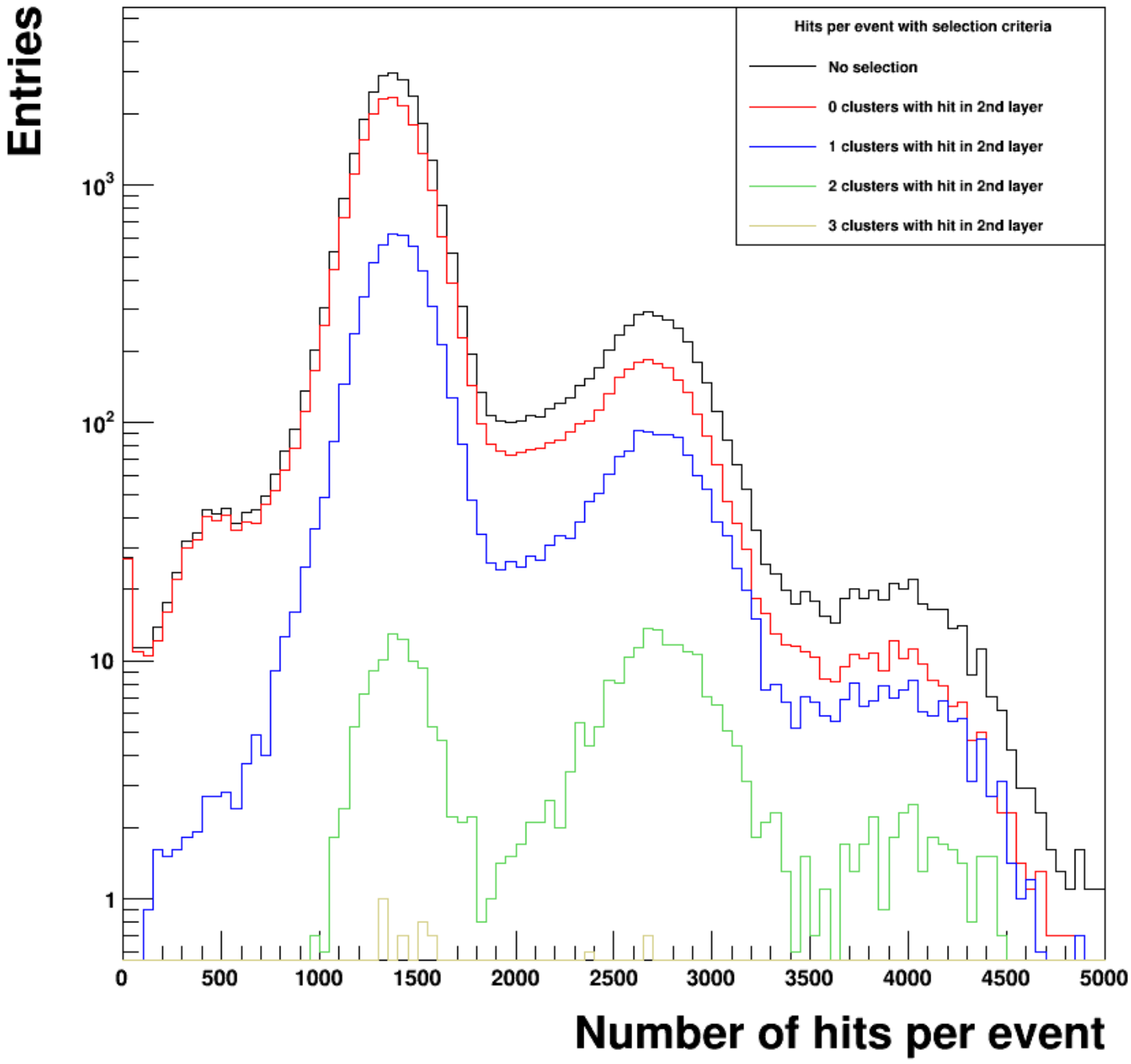
Minimal clustersize = 1



Run 1308 – 5 GeV

Search area = 5X5

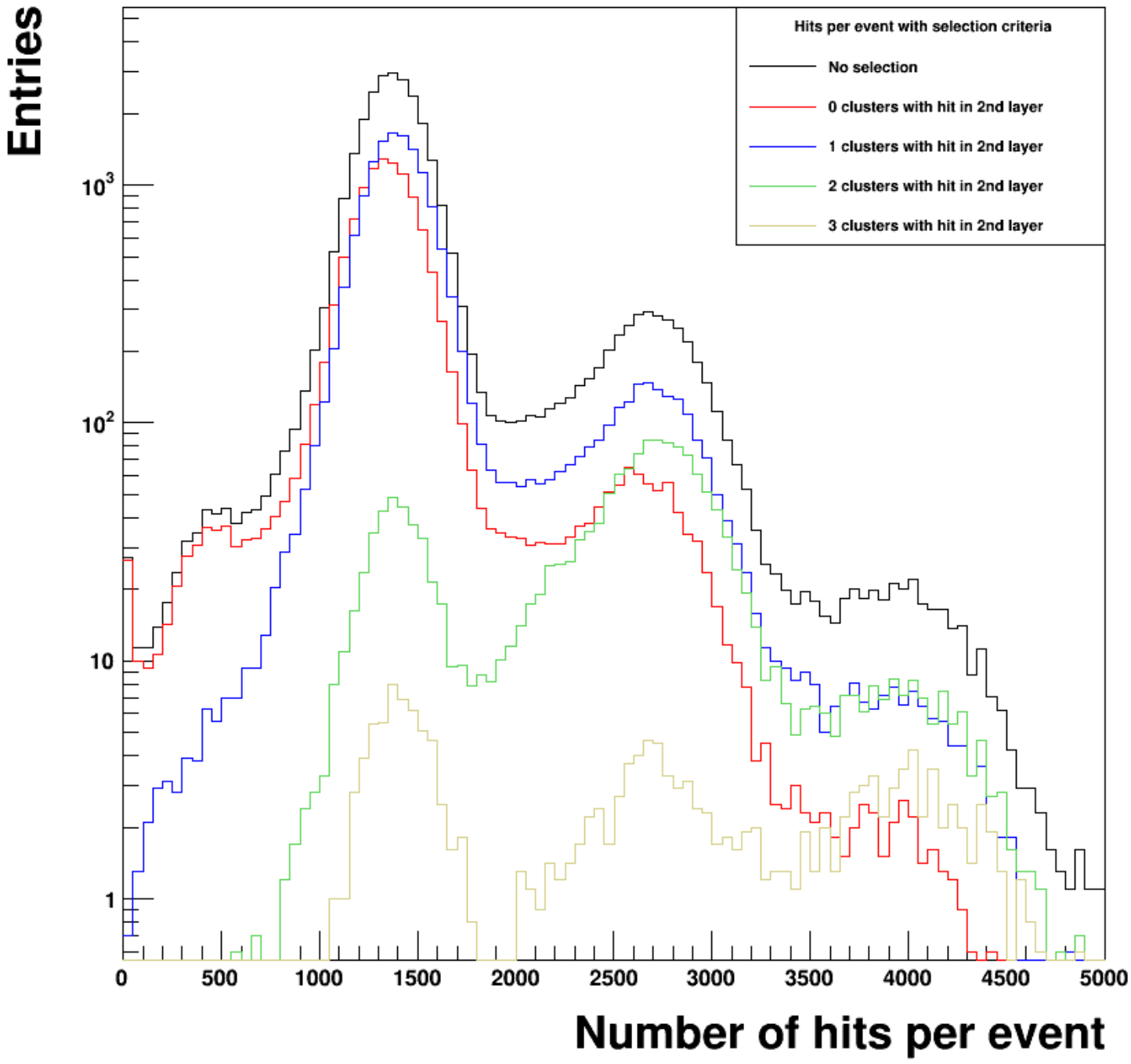
Minimal clustersize = 2



Run 1308 – 5 GeV

Search area = 7X7

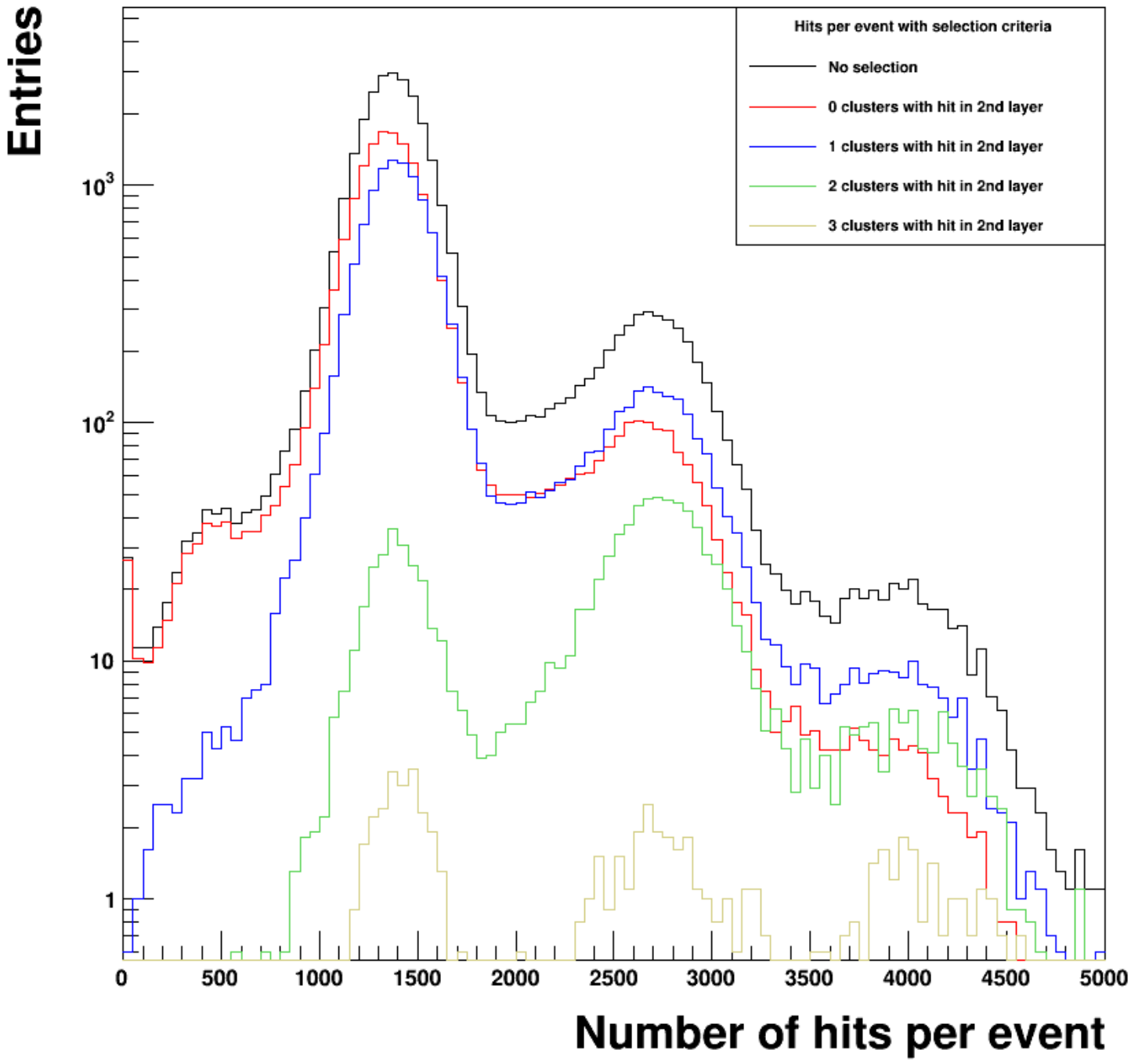
Minimal clustersize = 1



Run 1308 – 5 GeV

Search area = 7X7

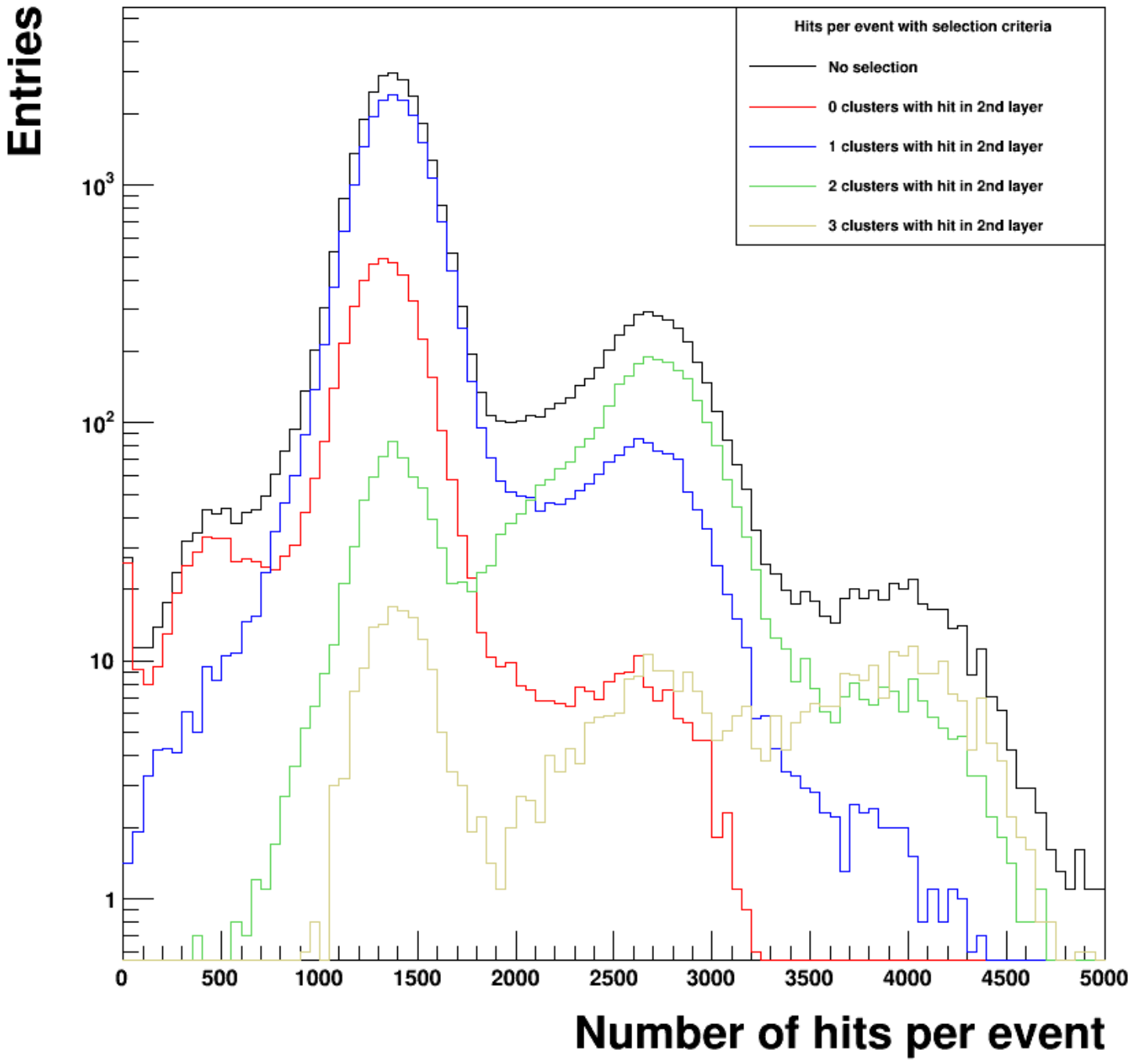
Minimal clustersize = 2



Run 1308 – 5 GeV

Search area = 9X9

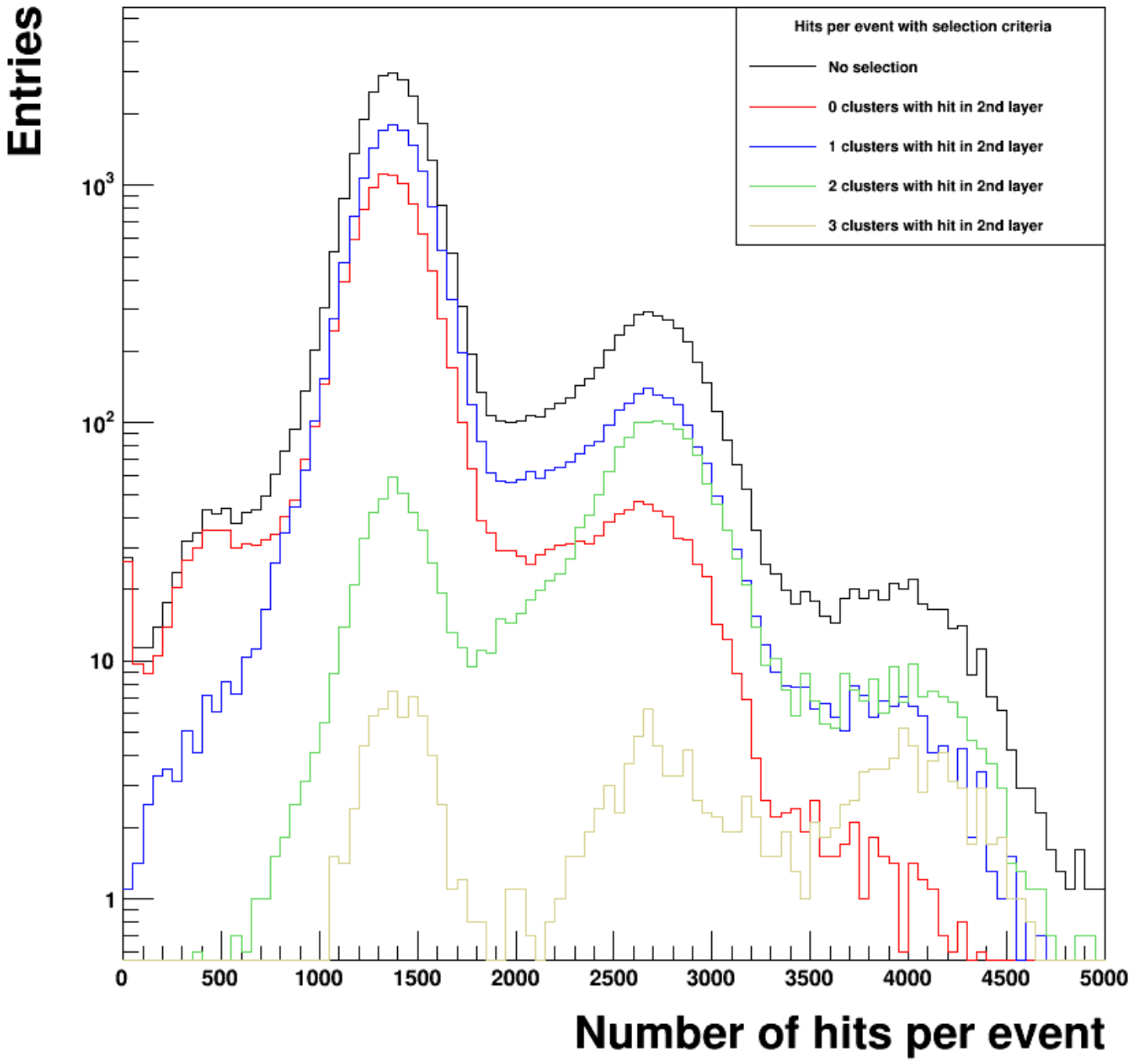
Minimal clustersize = 1



Run 1308 – 5 GeV

Search area = 9X9

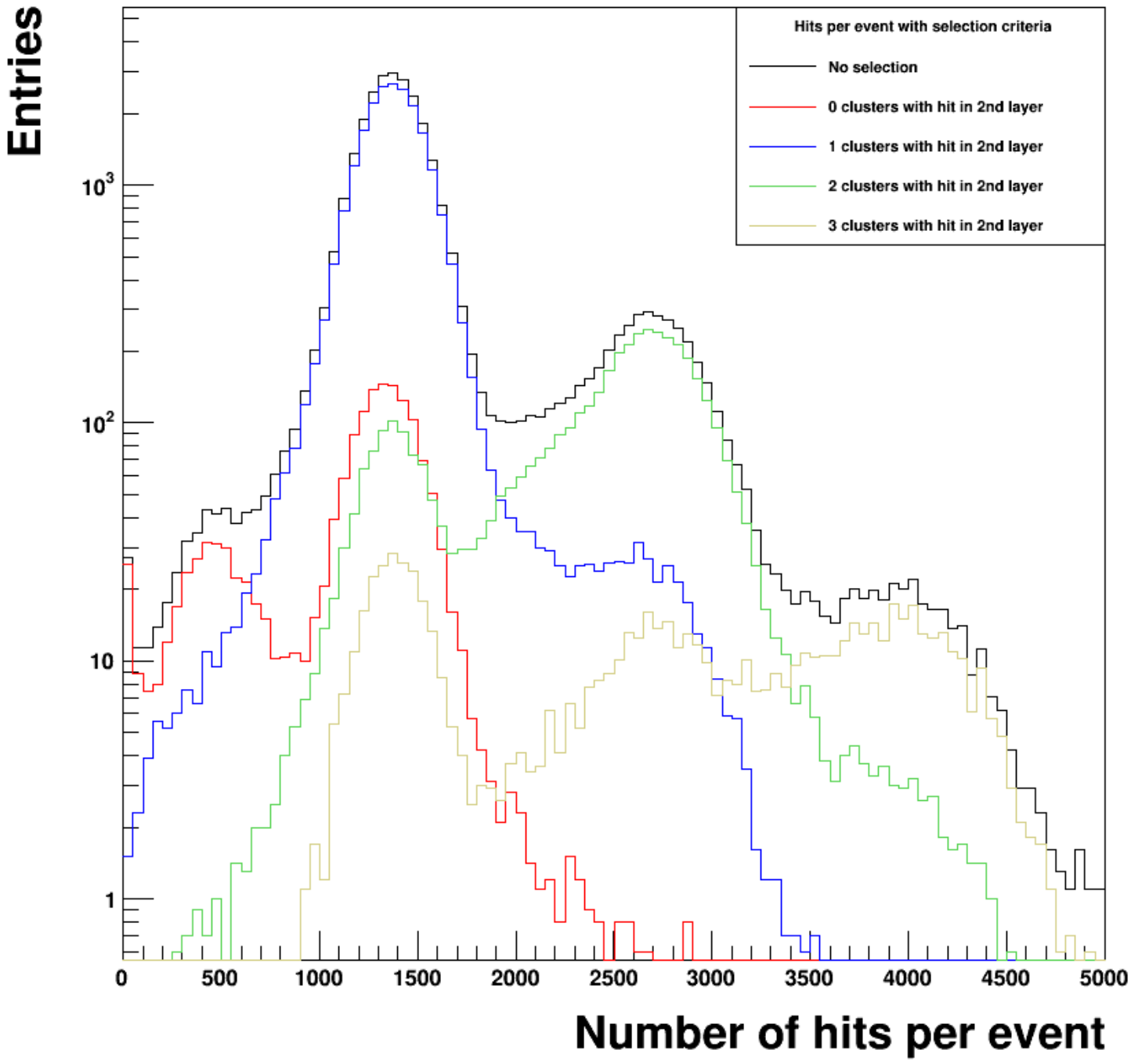
Minimal clustersize = 2



Run 1308 – 5 GeV

Search area = 11X11

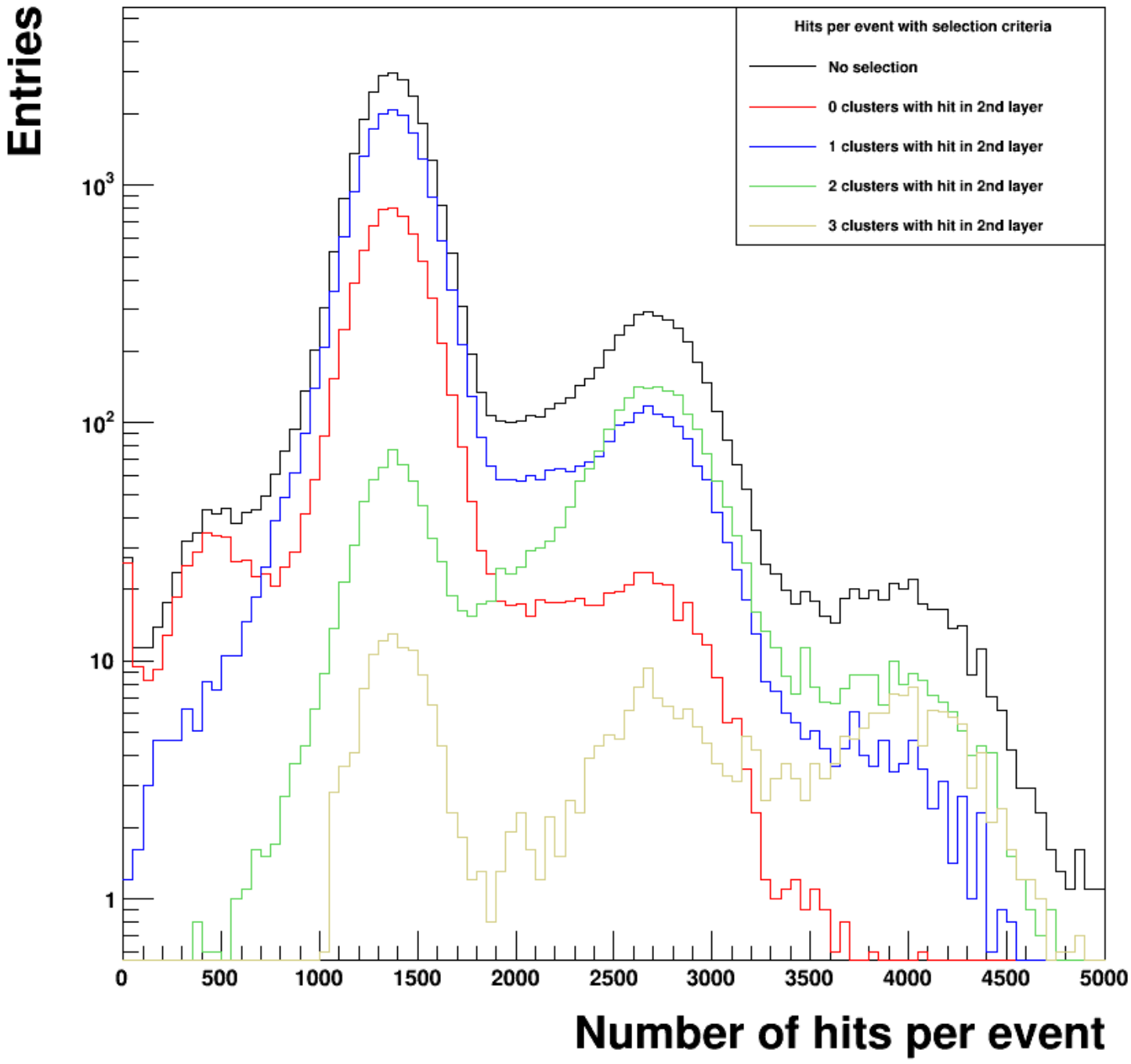
Minimal clustersize = 1



Run 1308 – 5 GeV

Search area = 11X11

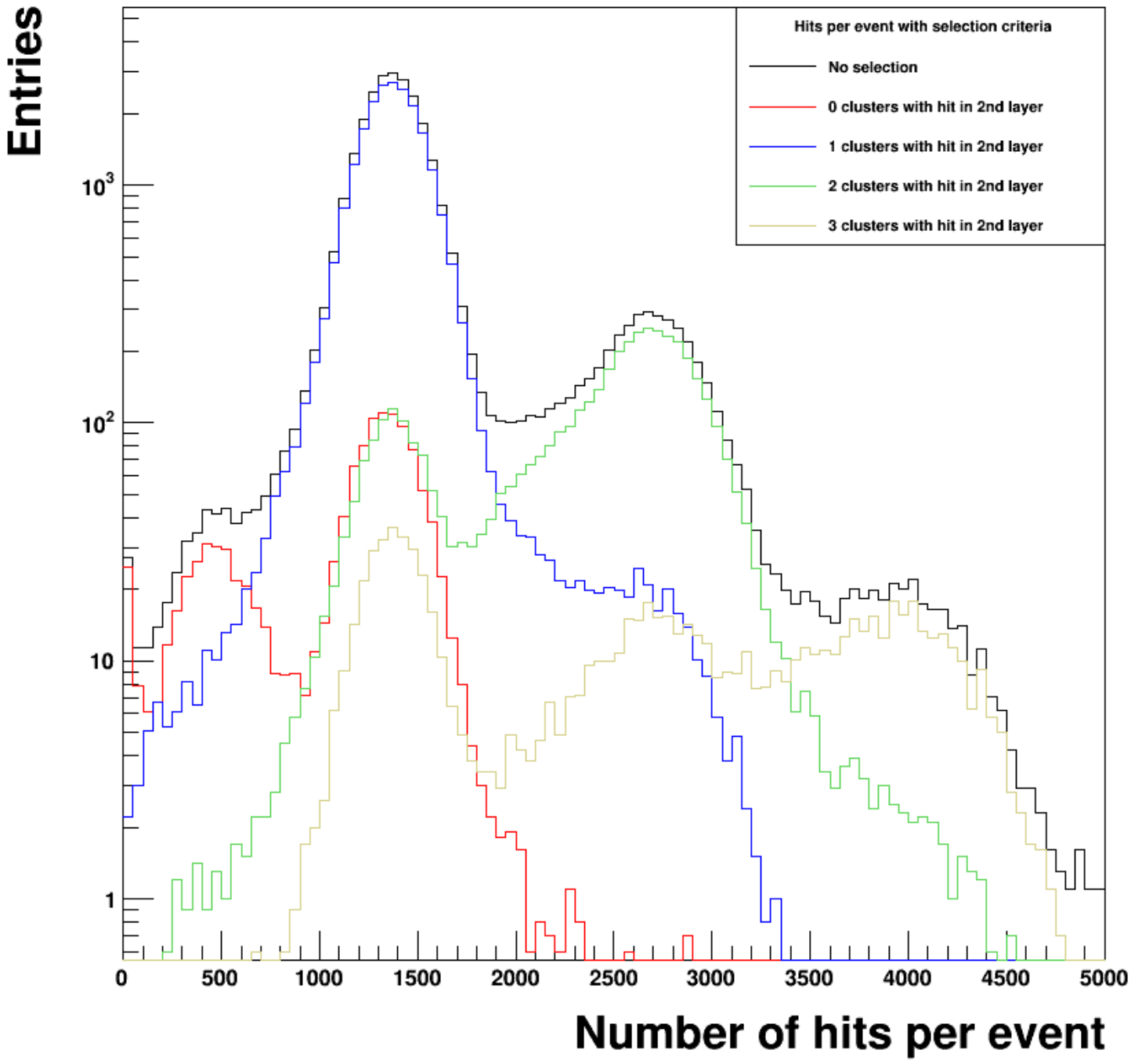
Minimal clustersize = 2



Run 1308 – 5 GeV

Search area = 13X13

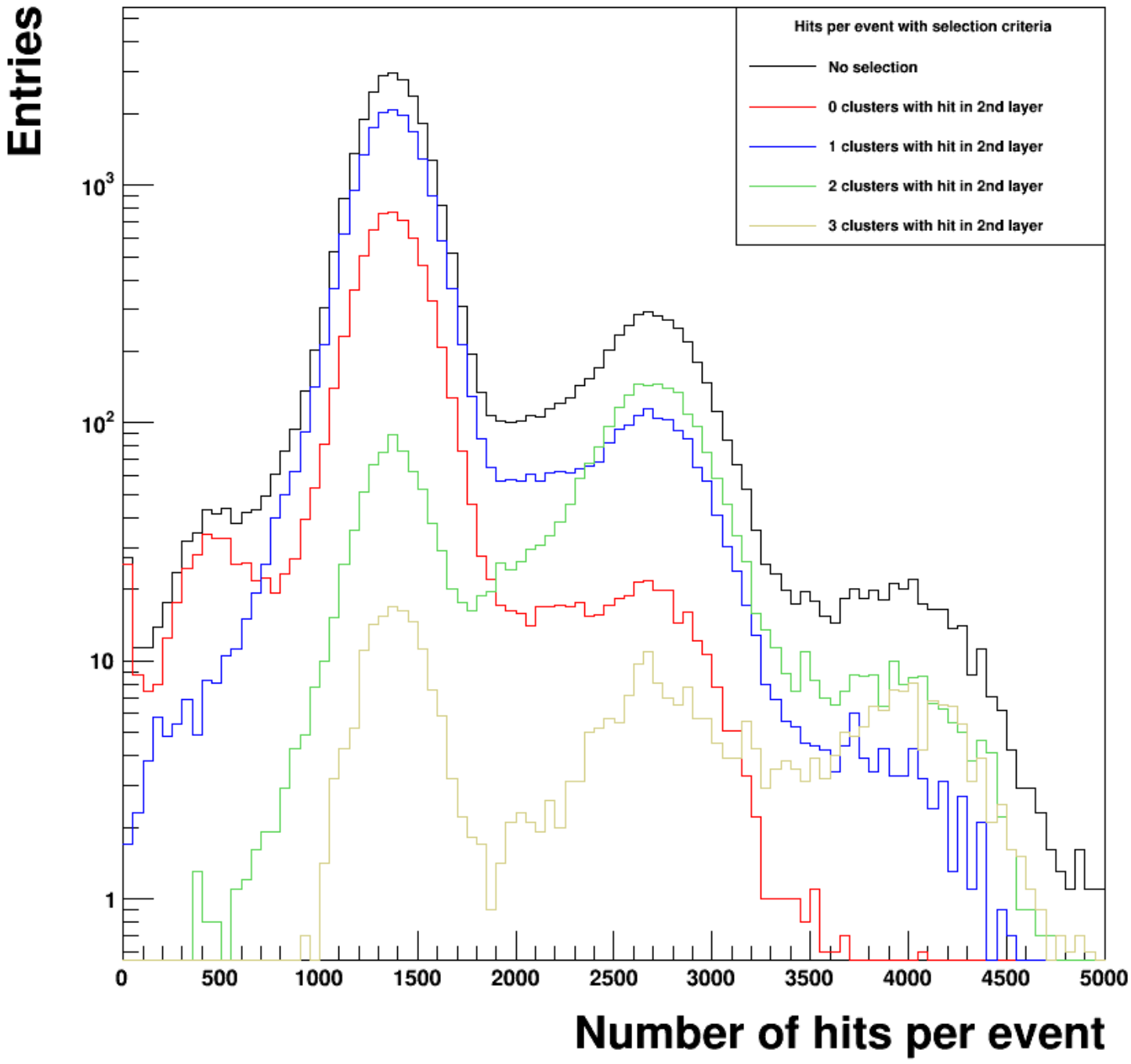
Minimal clustersize = 1



Run 1308 – 5 GeV

Search area = 13X13

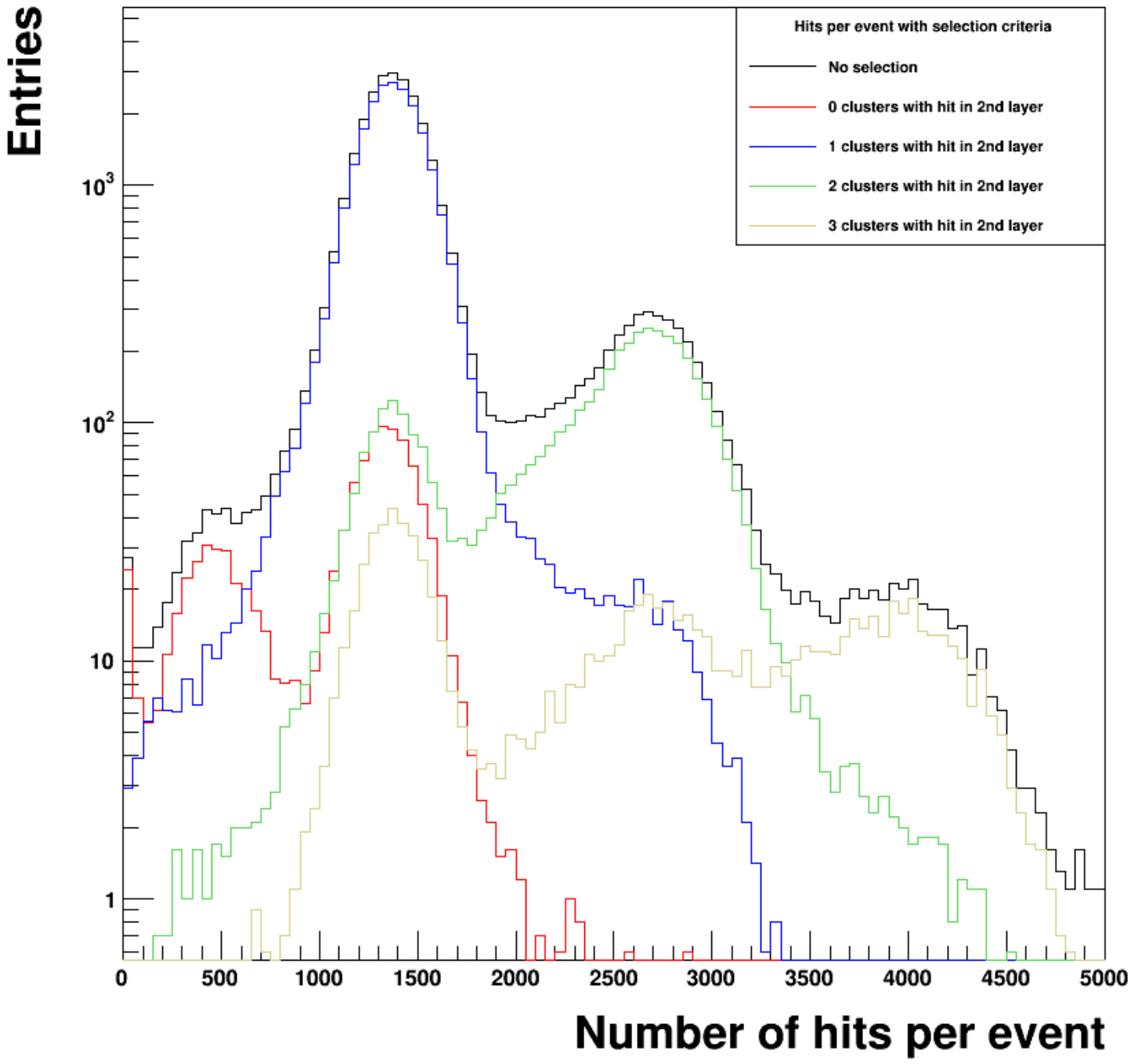
Minimal clustersize = 2



Run 1308 – 5 GeV

Search area = 15X15

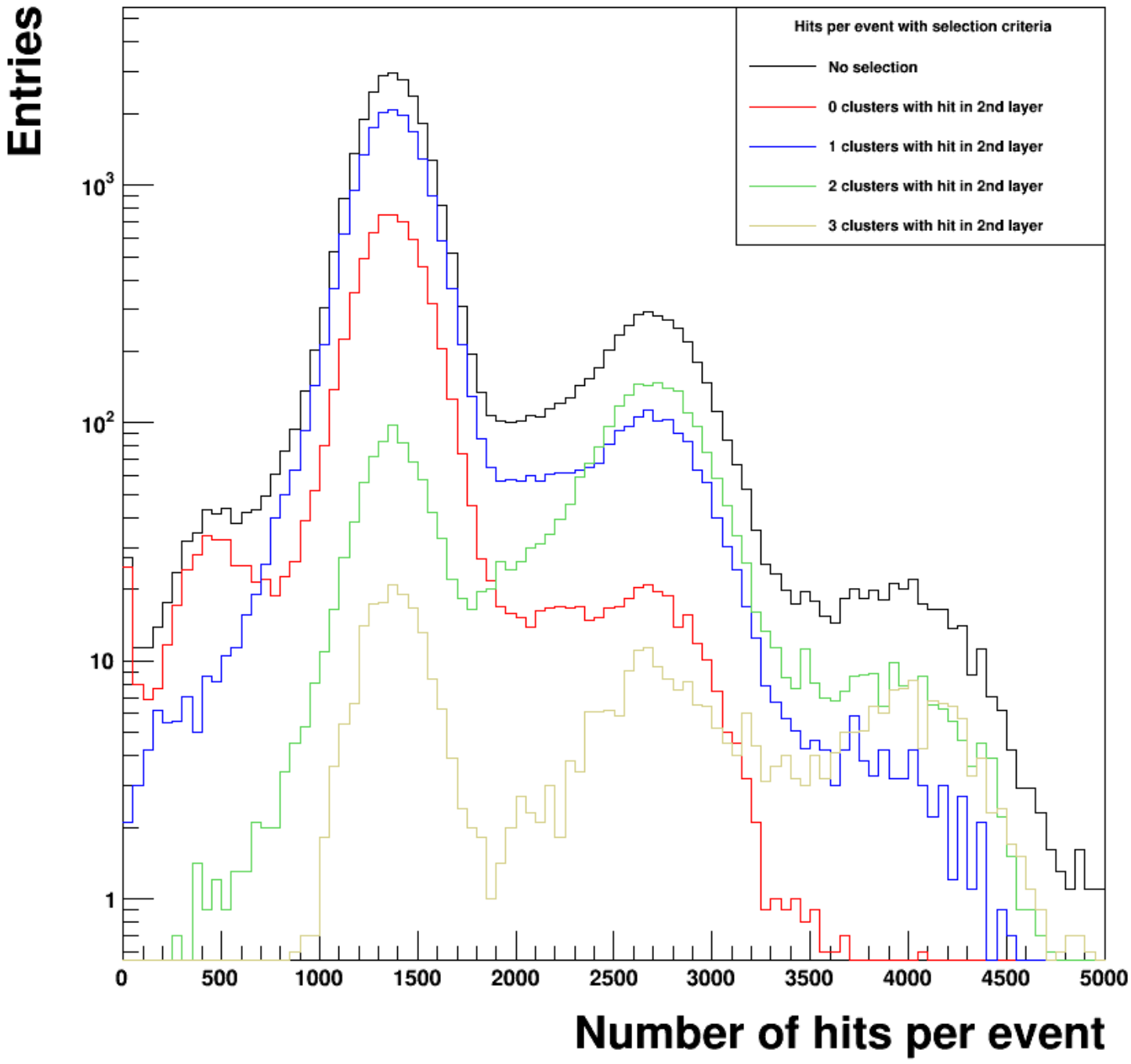
Minimal clustersize = 1



Run 1308 – 5 GeV

Search area = 15X15

Minimal clustersize = 2



Run 1308 – 5 GeV

Conclusion and further development

- Optimal settings:
  - Even a single hit is counted as a cluster.
  - Big search area. Exact area still to be determined.

- Further criteria:
  - Make a second search area, in the third layer. No hits in that search area? Cluster is still ignored.
  - If there are no clusters in first layer, maybe the shower starts developing later. In that case, check in later layers for clusters, using the same procedure.
  - Only select events with clusters close to the center of the layer.
  - Check event displays of different selections to get inspiration for other criteria.
  - Other suggestions?