

Selection Criteria for Incident Neutrino Beam Energy (MiniRun4_RHC)

➤ Path:

/pnfs/dune/tape_backed/users/mkramer/prod/MiniRun4/MiniRun4_1E19_RHC/MiniRun4_1E19_RHC.flow/FLOW

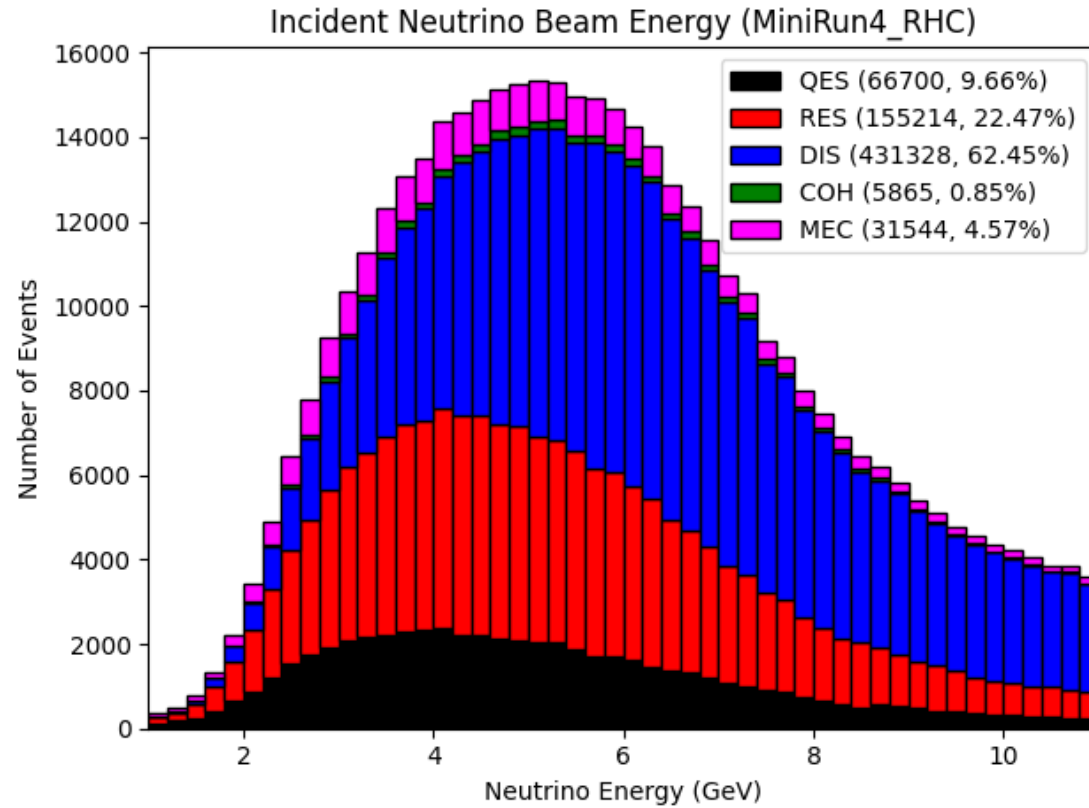
➤ Files: MiniRun4_1E19_RHC.flow.{i:05}.FLOW.h5 (1024 files)

➤ Dataset: /mc_truth/interactions/data

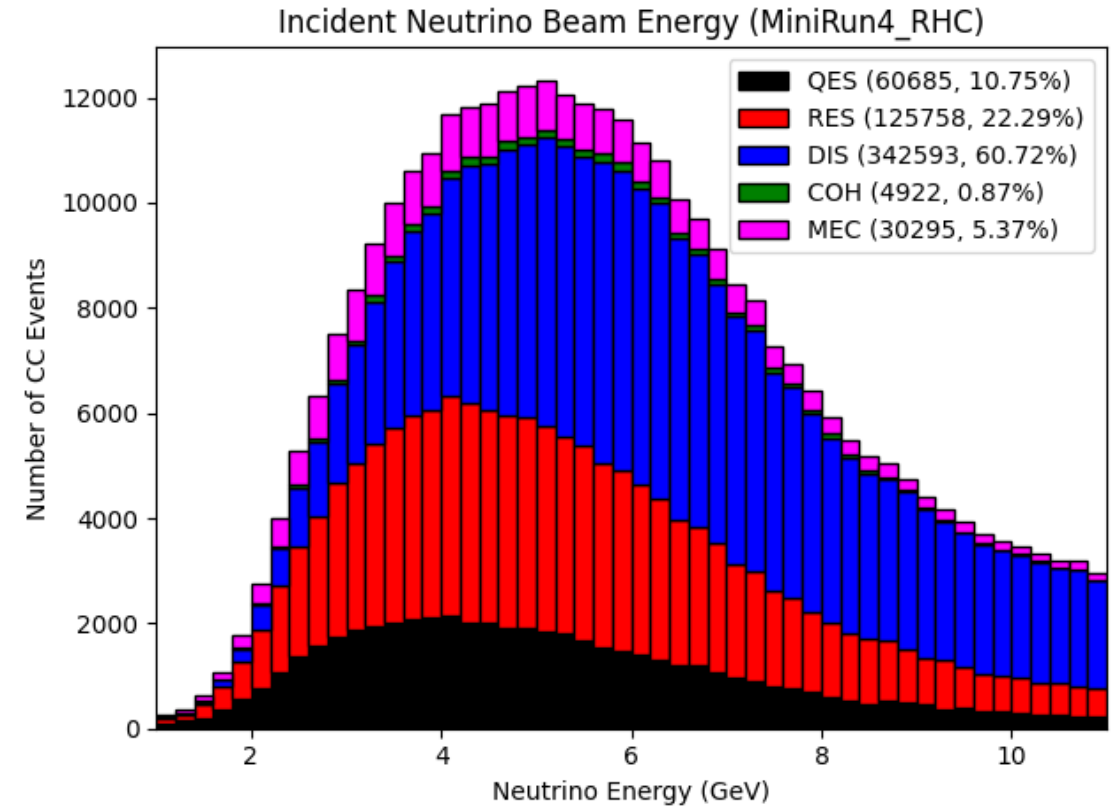
- **vertex**: the position of the interaction vertex (x,y,z,t) in [cm]
- **target**: the Z value of the struck nucleus
- **isCC**: True if charged-current event, False if neutral-current event
- **isQES**: quasi-elastic
- **isMEC**: meson-exchange current (also known as multi-nucleon)
- **isRES**: resonant pion production
- **isDIS**: deep inelastic scattering
- **isCOH**: coherent scattering
- **Enu**: incident neutrino energy in [MeV]

Incident Neutrino Beam Energy (MiniRun4_RHC)

➤ All Events



➤ All CC Events



Incident Neutrino Beam Energy (MiniRun4_RHC)

➤ The center of the 2x2 LArTPC is at (0, -268, 1300) cm in (x, y, z).

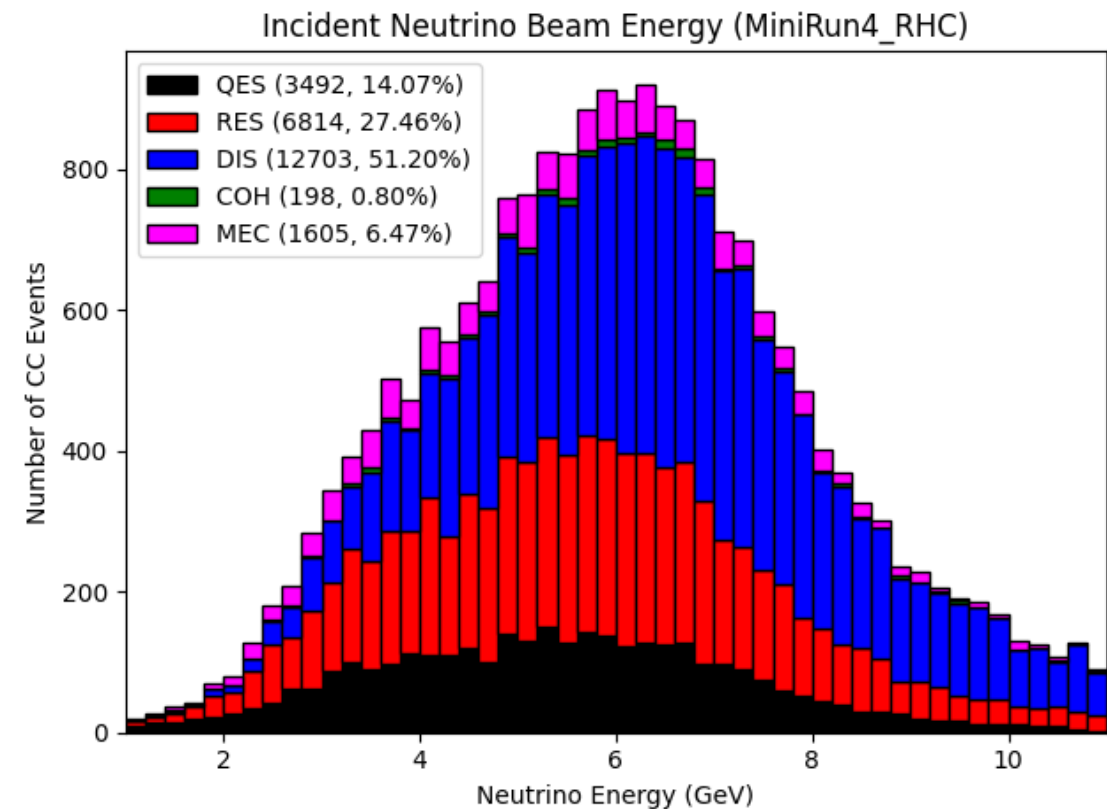
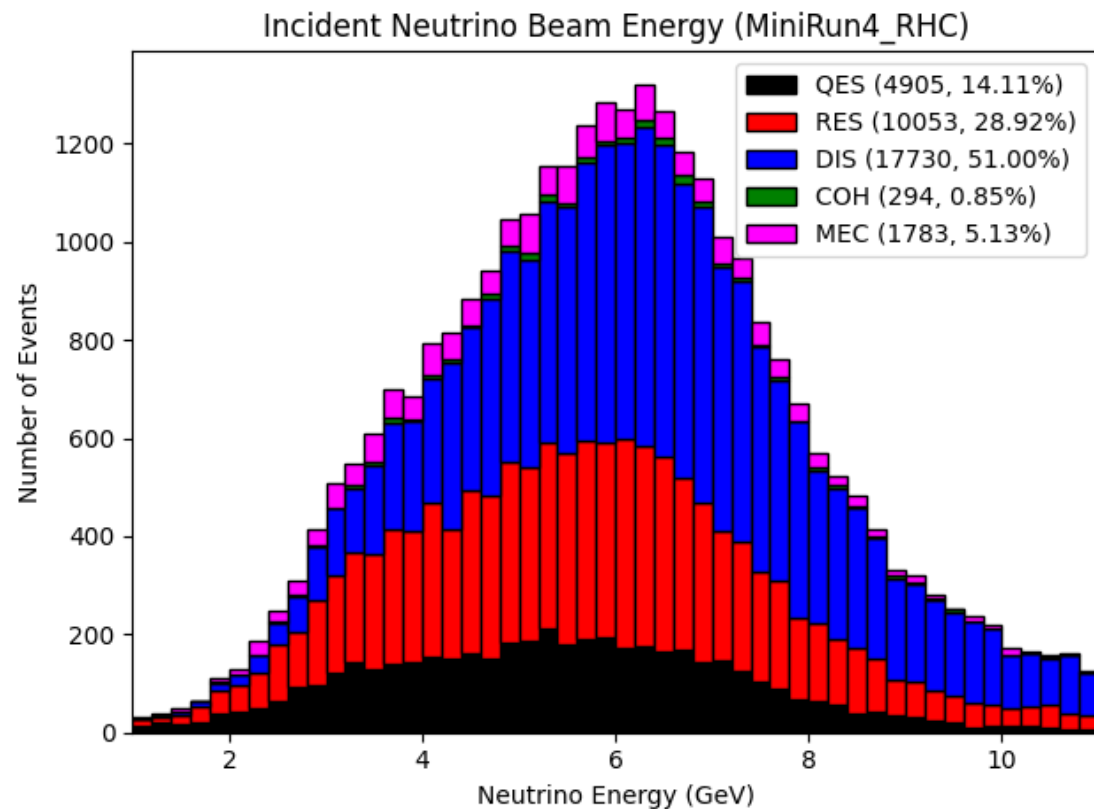
$$-67 < x < +67$$

$$-335 < y < -201$$

$$+1233 < z < +1367$$

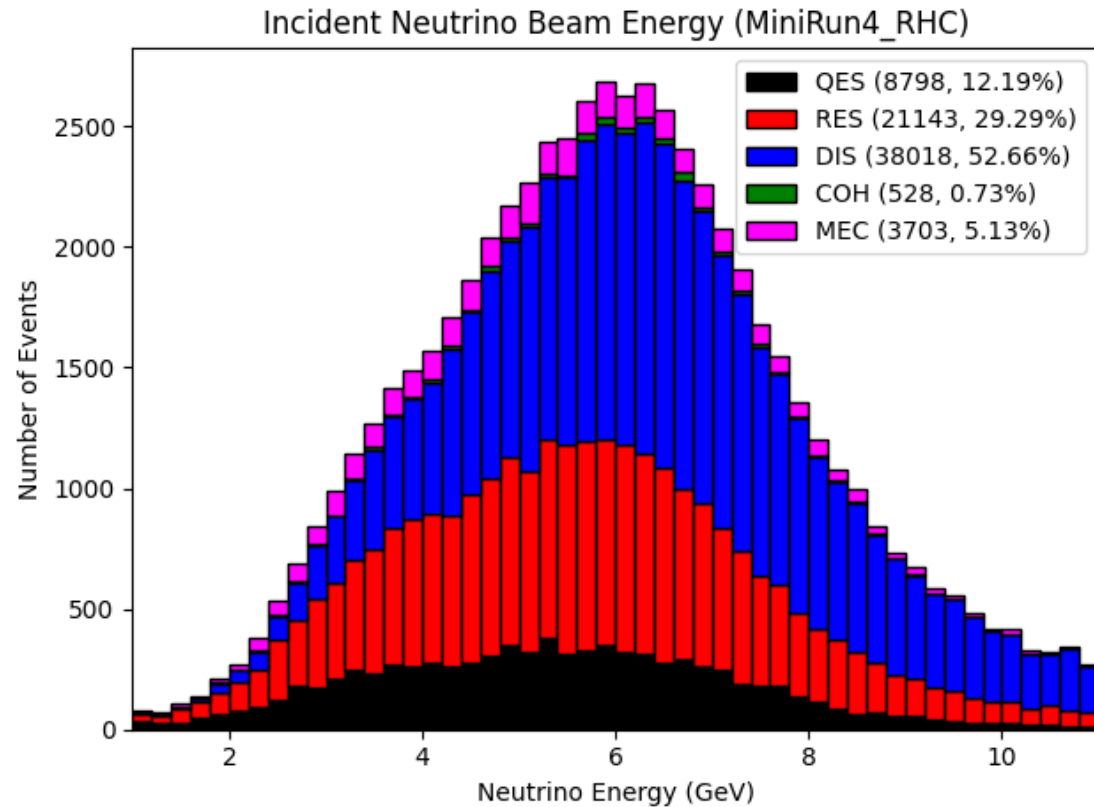
➤ All Events within FV

➤ All CC Events within FV

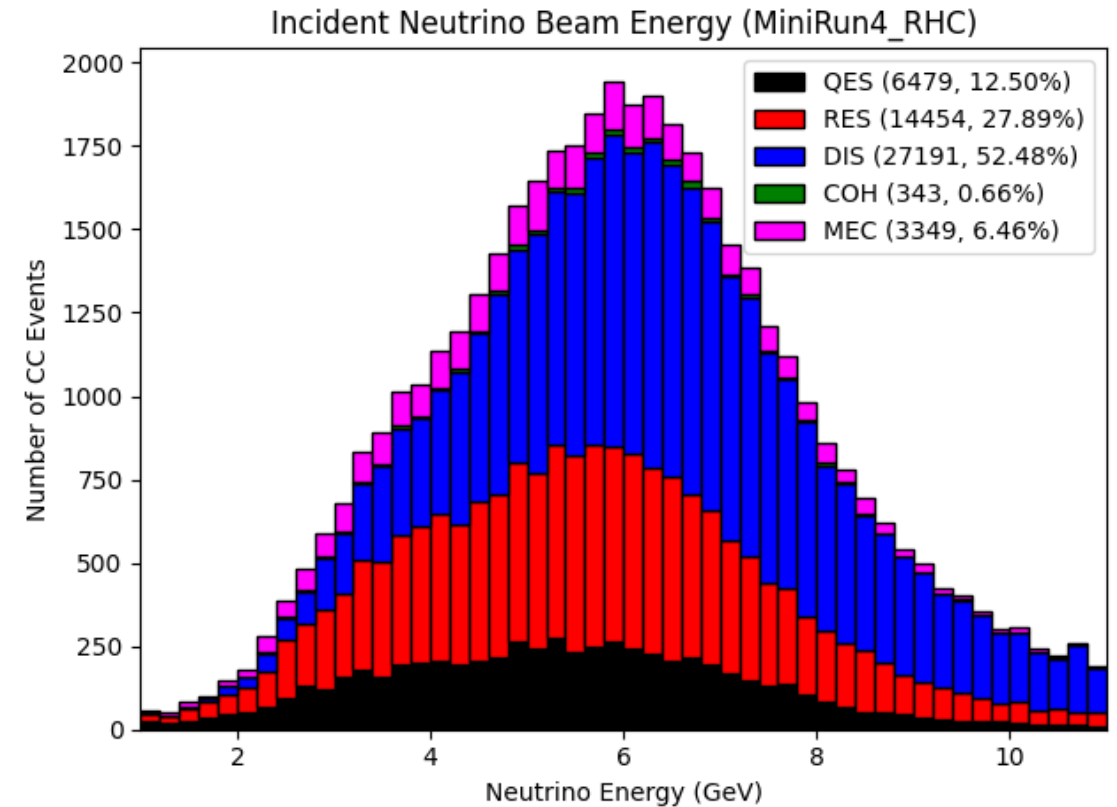


Incident Neutrino Beam Energy (MiniRun4_RHC)

➤ All Events (for $Z = 18$)



➤ All CC Events (for $Z = 18$)



Incident Neutrino Beam Energy (MiniRun4_RHC)

➤ The center of the 2x2 LArTPC is at (0, -268, 1300) cm in (x, y, z).

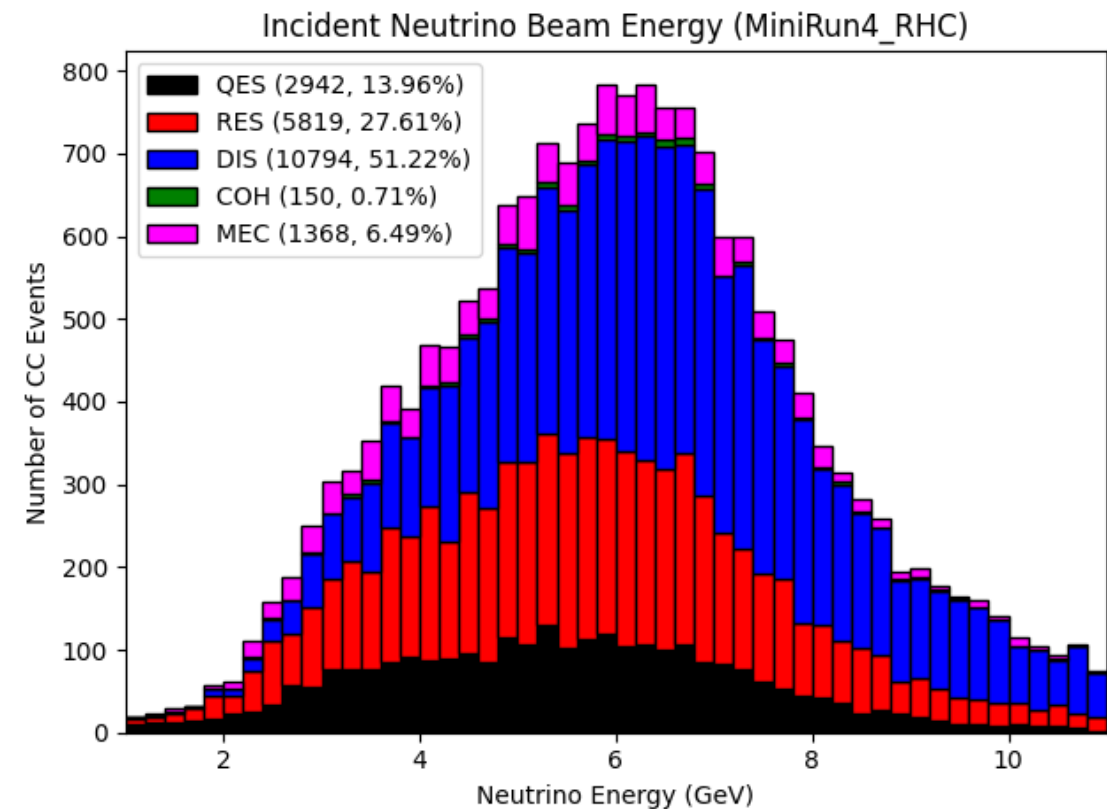
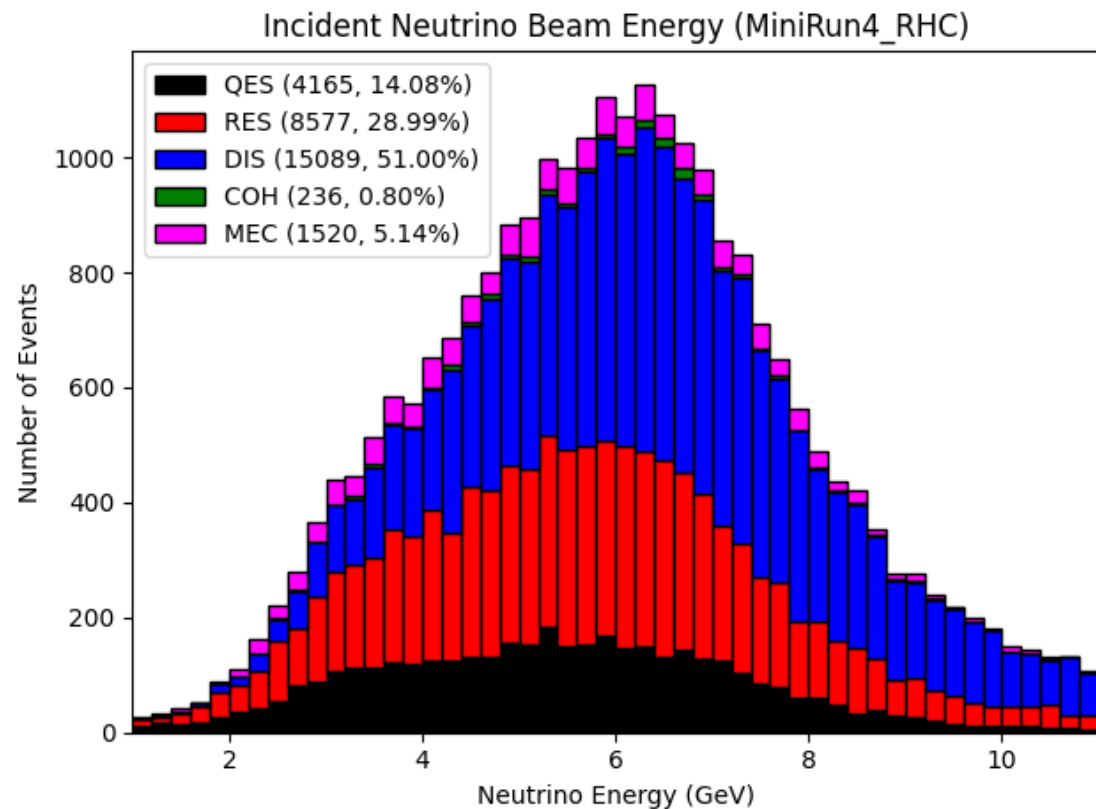
$$-67 < x < +67$$

$$-335 < y < -201$$

$$+1233 < z < +1367$$

➤ All Events within FV (for Z = 18)

➤ All CC Events within FV (for Z = 18)



Comparison (MiniRun4_RHC)

Number of Incident Neutrinos				
Type	All Events	All CC Events	All Events within FV	All CC Events within FV
QES	66700	60685	4905	3492
RES	155214	125758	10053	6814
DIS	431328	342593	17730	12703
COH	5865	4922	294	198
MEC	31544	30295	1783	1605
Total	690651	564253	34765	24812

Number of Incident Neutrinos (target = 18)				
Type	All Events	All CC Events	All Events within FV	All CC Events within FV
QES	8798	6479	4165	2942
RES	21143	14454	8577	5819
DIS	38018	27191	15089	10794
COH	528	343	236	150
MEC	3703	3349	1520	1368
Total	72190	51816	29587	21073