

# Homestake Atmospheric $\nu$ Flux

John LoSecco

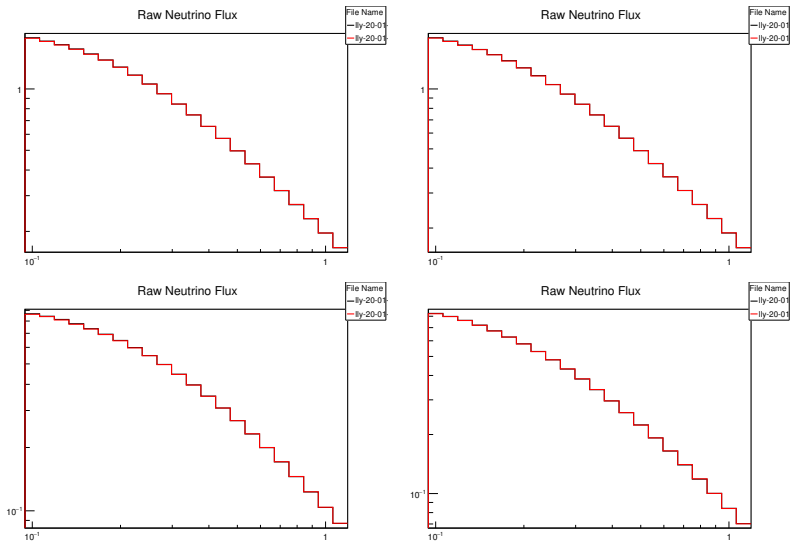
University of Notre Dame

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# Honda 2014 Flux

- ▶ Made for many locations
- ▶ Asked for Homestake mine
- ▶ No mountain
- ▶ From 100 MeV to 10 TeV

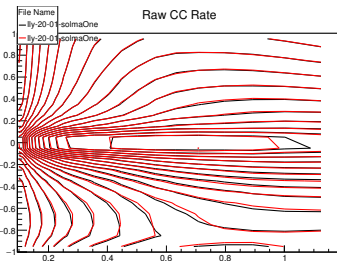
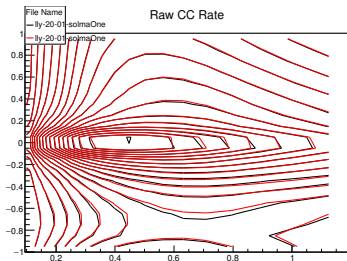
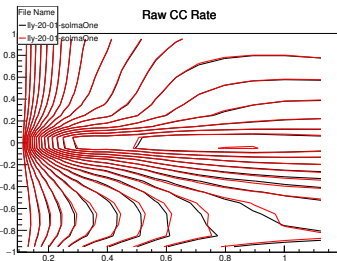
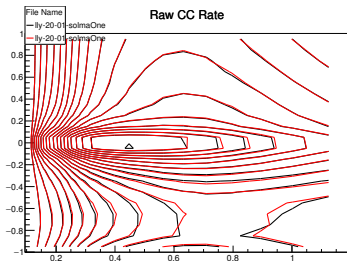
# Compare to Sudbury – Unoscillated spectrum



Black is SNO and Red in Homestake:  $\nu_\mu$   $\bar{\nu}_\mu$   $\nu_e$   $\bar{\nu}_e$

Loglog plot barely distinguishable

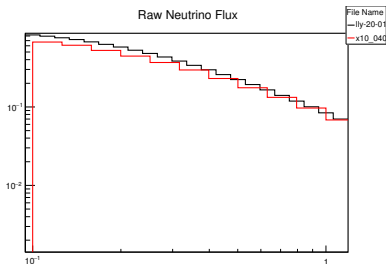
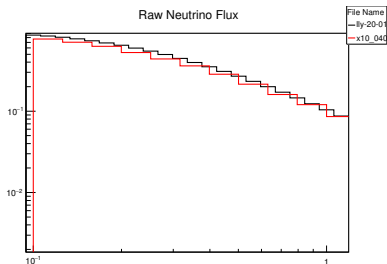
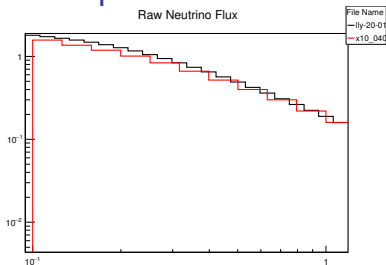
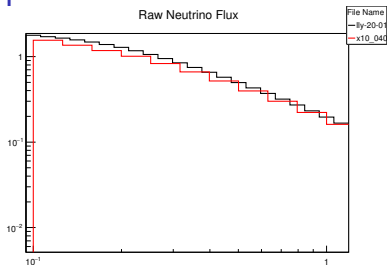
# Compare to Sudbury – Energy and Zenith – CC Events



Black is SNO and Red is Homestake:  $\nu_\mu \bar{\nu}_\mu \nu_e \bar{\nu}_e$

Contour plot of CC event rates barely distinguishable

# Compare to Soudan – Unoscillated spectrum

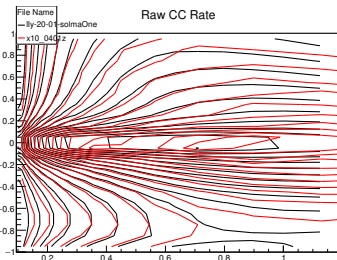
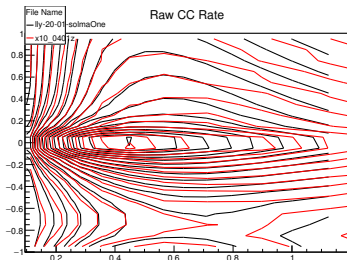
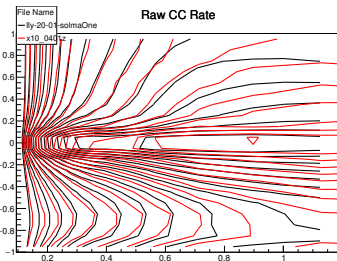
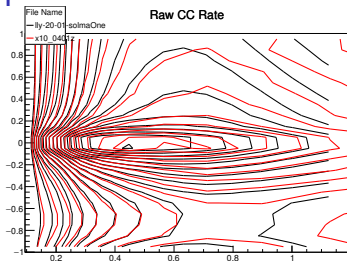


Red is Soudan (Gaisser) and Black is Homestake (Honda):  $\nu_\mu$   $\bar{\nu}_\mu$

$\nu_e$   $\bar{\nu}_e$

Loglog plot

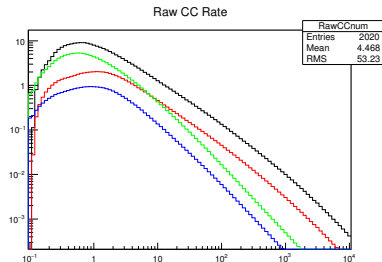
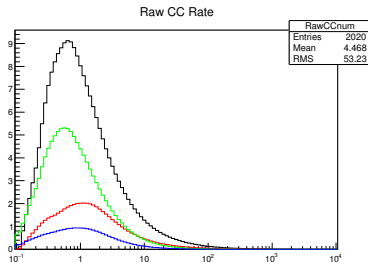
# Compare to Soudan – Energy and Zenith – CC Events



Red is Soudan (Gaiser) and Black is Homestake (Honda):  $\nu_\mu$   $\bar{\nu}_\mu$   $\nu_e$   $\bar{\nu}_e$

Contour plot of CC event rates barely distinguishable

# Unoscillated event rates (Sol Max)



Linear scale on left and log on right. From top down  $\nu_\mu$   $\nu_e$   $\bar{\nu}_\mu$   $\bar{\nu}_e$

