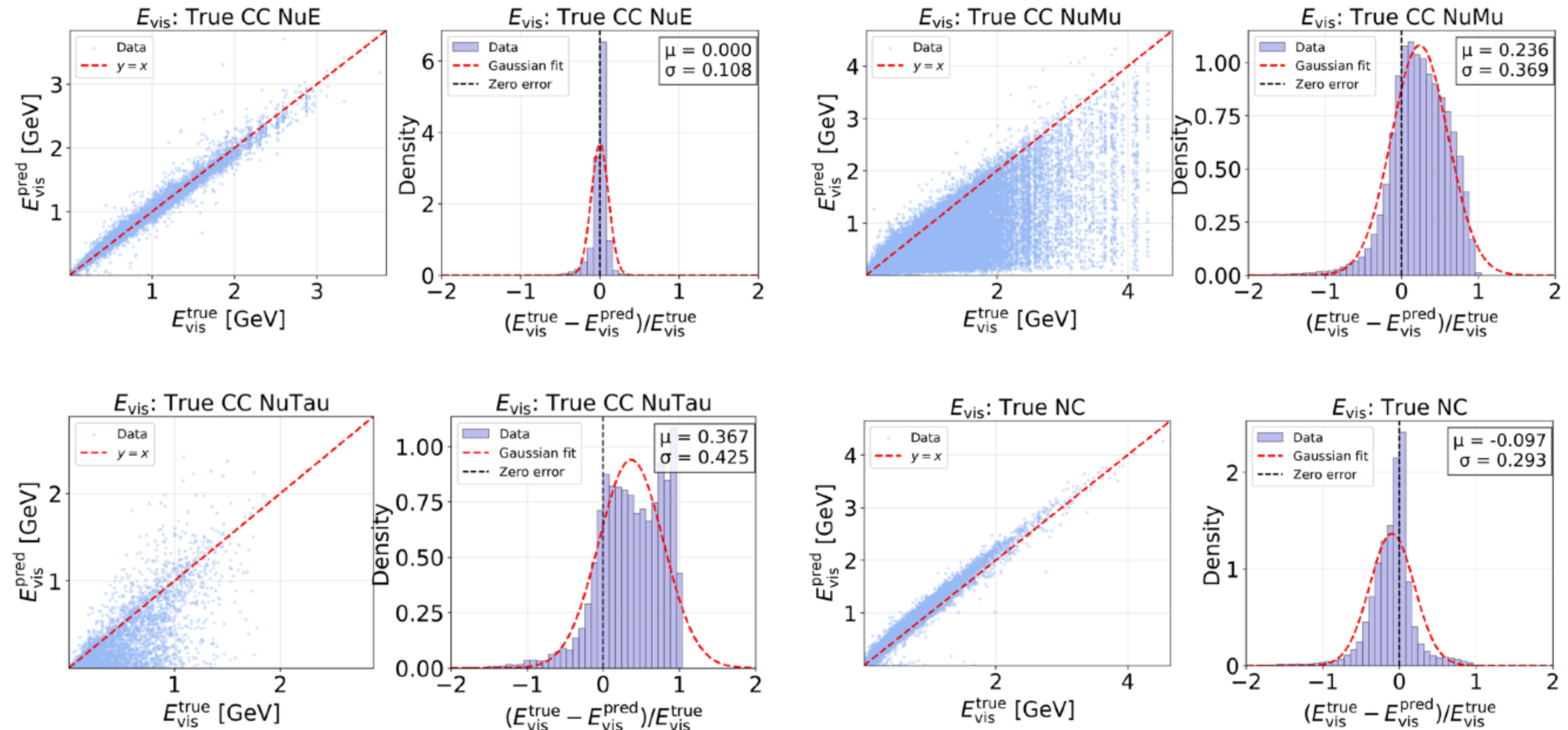


Deep Learning Model: Visible Energy

Regression Results

- **E_{vis}** : magnitude of visible_momentum
 - For CC it corresponds to Incoming Neutrino Energy.
 - For NC it corresponds to Hadrons Energy.
- Remarkable improvement in energy reconstruction:
 - Eliminated bias for ν_e CC.
 - The resolution is almost *halved* for all classes.



Deep Learning Model: p_T^{miss}

Regression Results

*BDT Results

- **pt_miss**: magnitude of x,y components visible_momentum.
- **Resolving the p_T^{miss} Dilemma:** Pre-Train finds a much more physically robust solution to the bimodal distribution.
 - Excellent, low-bias prediction for ν_e and ν_μ .
 - Simultaneously improving prediction for high- p_T^{miss} NC and ν_τ classes.
- Superior understanding, but still with remarkable bias.

