

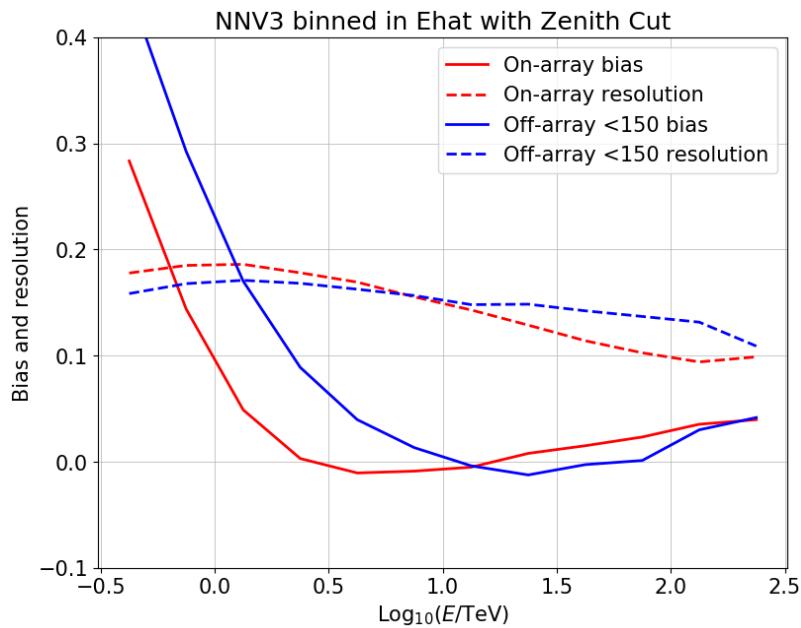
Neural Net for Pass5 Continued

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Negative Bias Source

- NN is negatively-biased at intermediate energies
- Has always been the case
- Disappeared when pre-PMT model update NN was trained on post-PMT model update MC
 - However, it returns if re-tuned and tested on the same MC
- Tried training with true-energy cut
 - Impossible to implement in directly real-life, but may indicate if bias comes from over-training on low-energy events
 - Tried cuts at 1 TeV and 10 TeV
- Also tried “naive” correction
 - Add largest bias (0.06 in log space) to each energy estimate
 - See what the effect this has

Performance Comparisons



Bias correction added

- Adding bias correction “by hand” does not worsen resolution
- Does worsen performance at high-energy
 - overcorrecting
- Cutting energy in training does not remove negative bias
 - Something else is causing it

