Figure 9: A ternary Convolutional Neural Network (tCNN, arXiv:1605.04711) implementation for the Phase-2 ATLAS Level-0 muon trigger has been set up and trained. The inputs to this network are all the strips of all the detector layers of a sector. The predicted leading muon transverse momentum ($p_T$) is shown as a function of the leading muon $p_T$ after detector simulation (true $p_T$). Ternary networks have weights made of just 2 bits. For this reason, tCNNs represent an optimal solution for FPGA synthesis and implementation, since the resource occupancy can be reduced up to a factor of 16, compared to a same-architecture non-ternary network. The columns of the histogram are normalized to unity.