

引入 low-cost collaborative layer 计算出原来 feature map 的哪个位置为 0，这样在原来的卷积运算中就可以跳过这个位置的计算，达到加速。

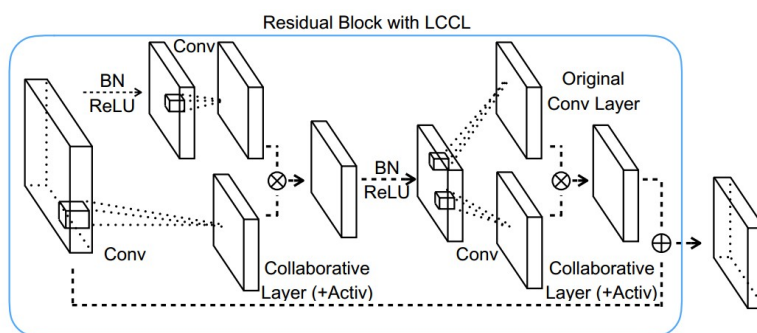


Figure 2. Connection strategy of collaborating LCCL with the original convolutional layer. The top figure shows the pre-activation residual block [12]; the bottom figure shows a “Bef-Aft” connection strategy to speed up the residual block. “Activ” represents that the collaborative layer is followed by BN and ReLU activation. The first LCCL receives the input tensor before being activated by BN and ReLU, and the second one receives the input tensor after BN and ReLU. (Best viewed in the original pdf file.)

在 lccl 层后面加入 BN，ReLU 使得网络能够训练