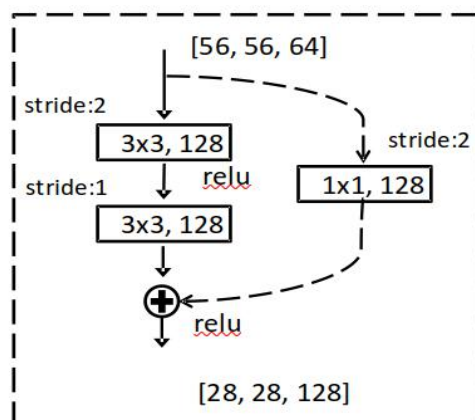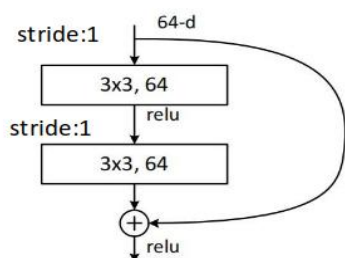# 1. 残差网络结构图

Building blocks are shown in brackets, with the numbers of blocks stacked. Downsampling is performed by conv3_1, conv4_1 and conv5_1 with a stride of 2.

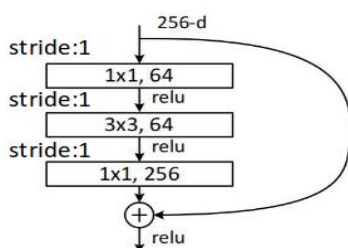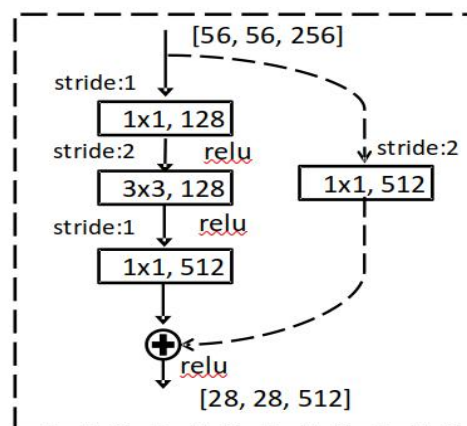| layer name	output size	18-layer	34-layer	50-layer	101-layer	152-layer
conv1	112×112	7×7, 64, stride 2				
conv2_x	56×56	3×3 max pool, stride 2				
conv2_x	56×56	$\begin{bmatrix} 3×3, 64 \\ 3×3, 64 \end{bmatrix}×2$	$\begin{bmatrix} 3×3, 64 \\ 3×3, 64 \end{bmatrix}×3$	$\begin{bmatrix} 1×1, 64 \\ 3×3, 64 \\ 1×1, 256 \end{bmatrix}×3$	$\begin{bmatrix} 1×1, 64 \\ 3×3, 64 \\ 1×1, 256 \end{bmatrix}×3$	$\begin{bmatrix} 1×1, 64 \\ 3×3, 64 \\ 1×1, 256 \end{bmatrix}×3$
conv3_x	28×28	$\begin{bmatrix} 3×3, 128 \\ 3×3, 128 \end{bmatrix}×2$	$\begin{bmatrix} 3×3, 128 \\ 3×3, 128 \end{bmatrix}×4$	$\begin{bmatrix} 1×1, 128 \\ 3×3, 128 \\ 1×1, 512 \end{bmatrix}×4$	$\begin{bmatrix} 1×1, 128 \\ 3×3, 128 \\ 1×1, 512 \end{bmatrix}×4$	$\begin{bmatrix} 1×1, 128 \\ 3×3, 128 \\ 1×1, 512 \end{bmatrix}×8$
conv4_x	14×14	$\begin{bmatrix} 3×3, 256 \\ 3×3, 256 \end{bmatrix}×2$	$\begin{bmatrix} 3×3, 256 \\ 3×3, 256 \end{bmatrix}×6$	$\begin{bmatrix} 1×1, 256 \\ 3×3, 256 \\ 1×1, 1024 \end{bmatrix}×6$	$\begin{bmatrix} 1×1, 256 \\ 3×3, 256 \\ 1×1, 1024 \end{bmatrix}×23$	$\begin{bmatrix} 1×1, 256 \\ 3×3, 256 \\ 1×1, 1024 \end{bmatrix}×36$
conv5_x	7×7	$\begin{bmatrix} 3×3, 512 \\ 3×3, 512 \end{bmatrix}×2$	$\begin{bmatrix} 3×3, 512 \\ 3×3, 512 \end{bmatrix}×3$	$\begin{bmatrix} 1×1, 512 \\ 3×3, 512 \\ 1×1, 2048 \end{bmatrix}×3$	$\begin{bmatrix} 1×1, 512 \\ 3×3, 512 \\ 1×1, 2048 \end{bmatrix}×3$	$\begin{bmatrix} 1×1, 512 \\ 3×3, 512 \\ 1×1, 2048 \end{bmatrix}×3$
	1×1	average pool, 1000-d fc, softmax				
FLOPs		$1.8×10^9$	$3.6×10^9$	$3.8×10^9$	$7.6×10^9$	$11.3×10^9$

2. 18、34 层残差块结构

注意：主分支与shortcut的输出特征矩阵shape必须相同

3. 50、101、152 层残差块结构

注意：主分支与shortcut的输出特征矩阵shape必须相同