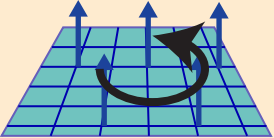
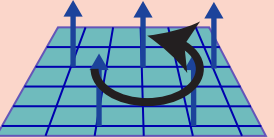
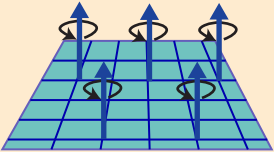
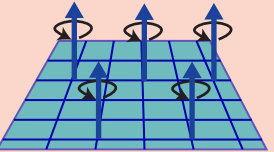
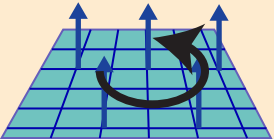
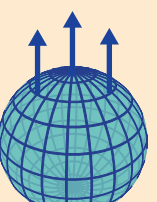
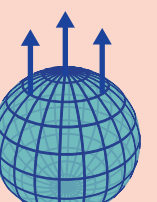
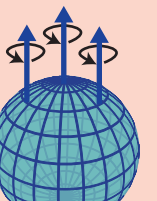


Equivariance in Neural Network Layers

Layer Input	Layer Output	Layer Model
$x \in \mathbb{R}^n$ 	$y \in \mathbb{R}^{n'}$ 	 Equivariant-Perceptron from [Finzi21] Linear layer from GATr [Brehmer23]
$x : \mathbb{R}^n \rightarrow \mathbb{R}^{n'}$ 	$y : \mathbb{R}^m \rightarrow \mathbb{R}^{m'}$ 	Convolutional [Lecun] Regular Steerable Euclidean [Cohen17]
$x : \mathbb{R}^n \rightarrow \mathbb{R}^n$ 	$y : \mathbb{R}^{n'} \rightarrow \mathbb{R}^{n'}$ 	Steerable Convolutional [Cohen17]
$x : \mathbb{R}^n \rightarrow \mathbb{R}^n$ 	$y : G_p \rightarrow \mathbb{R}^{n'}$ 	Regular Group-Convolution (first layer) [Cohen16]
$x : G_p \rightarrow \mathbb{R}^n$ 	$y : G_p \rightarrow \mathbb{R}^{n'}$ 	Regular Group Convolution (second layer) [Cohen16]
$x : G_p/H \rightarrow \mathbb{R}^n$ 	$y : G_p/H \rightarrow \mathbb{R}^{n'}$ 	General Steerable with quotient representation [Cohen17]
$x : G_p/H \rightarrow \mathbb{R}^n$ 	$y : G_p/H \rightarrow \mathbb{R}^{n'}$ 	Group Convolution on homogeneous spaces [Cohen19b]
$x : M \rightarrow \mathbb{R}^n$ 	$y : M \rightarrow \mathbb{R}^{n'}$ 	Regular Gauge-Convolution [Cohen19a]
$x : M \rightarrow \mathbb{R}^n$ 	$y : M \rightarrow \mathbb{R}^{n'}$ 	Gauge-Convolution with induced representation [Cohen19a]