Physical controls on the variability of offshore propagation of convection from Sumatra

Article

Supplemental Material

Supporting Information for "Physical controls on the variability of offshore propagation of convection from Sumatra"

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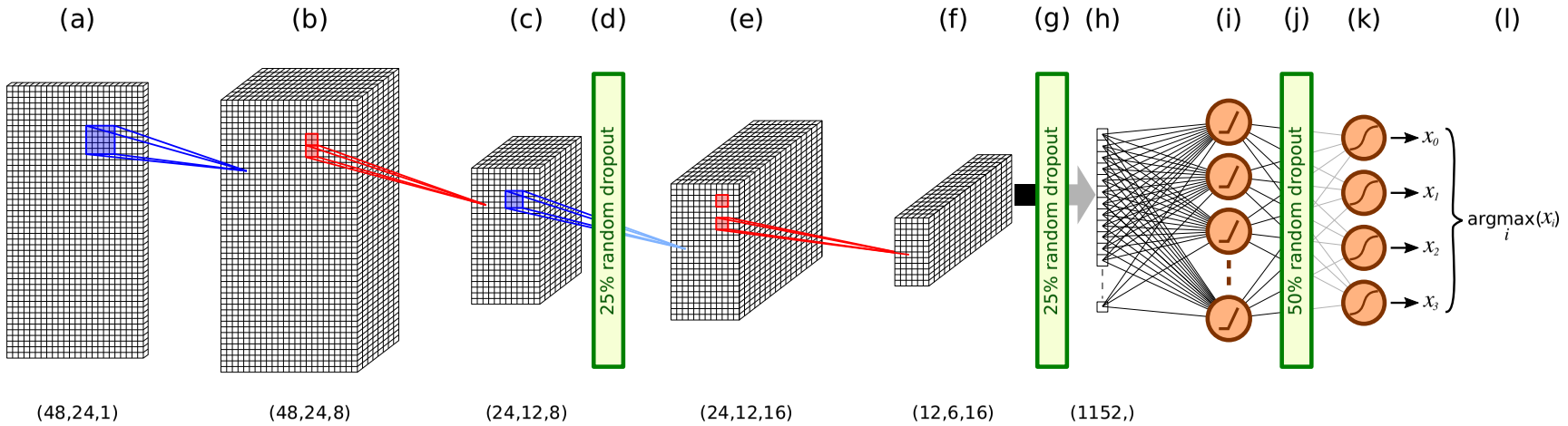

Figure S1. Schematic diagram of the convolutional neural network (CNN) used to classify offshore-propagating Hovmöller diagrams of precipitation. (a) The input layer accepts images of size $nt = 48$ by $nx = 24$ with 1 channel; and 8 convolutional filters of size 5×5 are applied. (b) Max pooling with pools of size 2×2 reduces the size of the array. (c) A second convolutional layer has 16 filters of size 3×3, with (d) 25% random dropout applied to reduce overfitting. (e) A second max pooling layer also uses pools of size 2×2 but with a stride of 2 pixels. (f) The resulting array is flattened to 1D, passing through (g) another 25% random dropout. (h) The flattened array is the input to (i) a dense layer of 256 nodes using the ReLU activation function. (j) A 50% random dropout is applied before (k) the output layer, which uses the softmax activation function and produces four output values. (l) The largest of these determines the classification of the regime. Sizes of arrays are stated below the figure; for further details, see main text.