

1819-108-REBCO4-001

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1 Introduction

3th page

- The sigmoid function (or logistic)

$$\varphi(x) = \frac{1}{1 + \exp(-x)}.$$

- The hyperbolic tangent function ("tanh")

$$\varphi(x) = \frac{\exp(x) - \exp(-x)}{\exp(x) + \exp(-x)} = \frac{\exp(2x) - 1}{\exp(2x) + 1}.$$

- The hard threshold function

$$\varphi_{\beta}(x) = 1_x \geq \beta$$

- Here is a schematic representation of an artificial neuron where $\sum = \langle w_j, x \rangle + b_j$