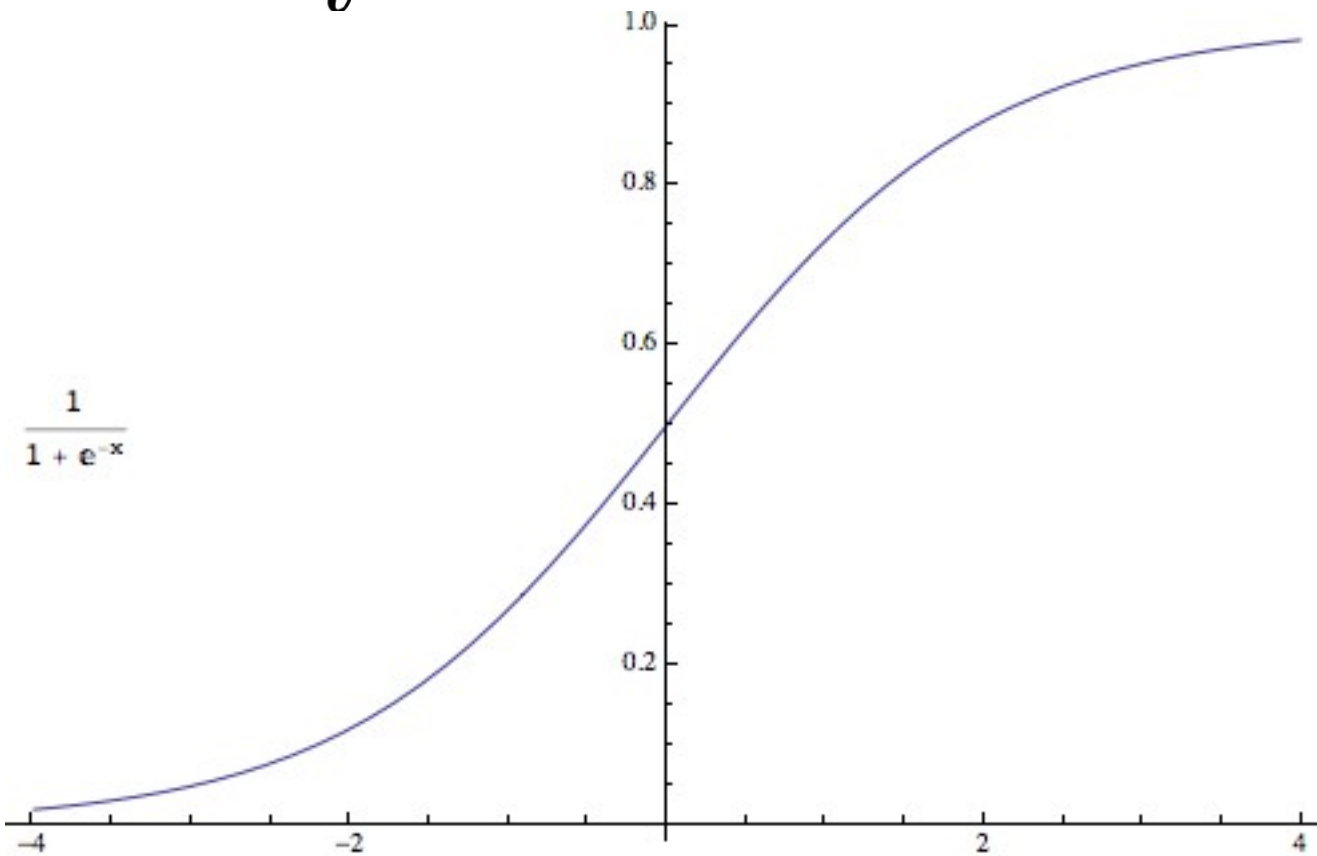


Error estimation and function approximation with artificial neural networks

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Nordic Winter School on Cosmology and Particle Physics
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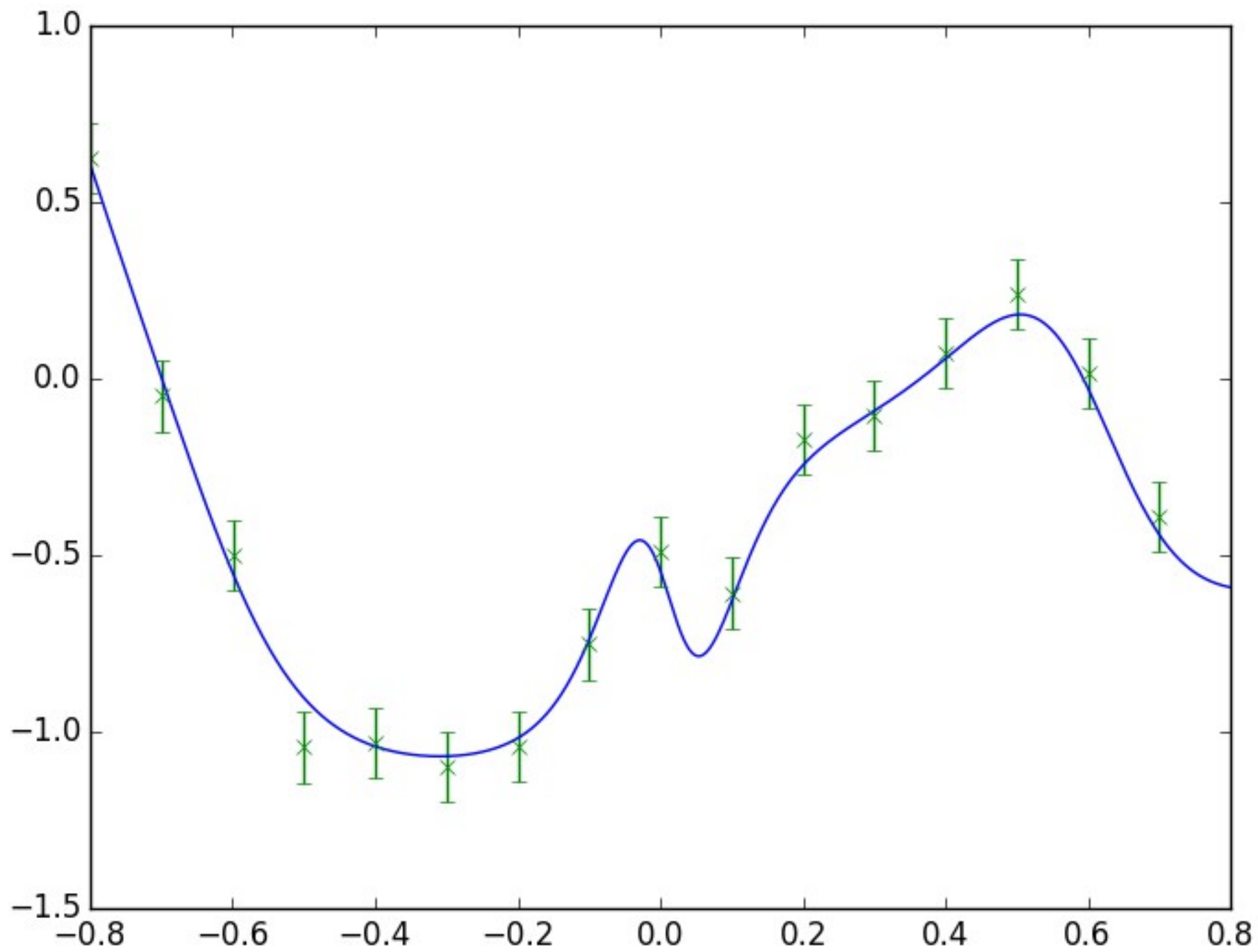
What are
artificial (feed forward)
neural networks?

$$s_j^l = \sum_i w_{ji}^l \mathcal{F}(s_i^{l-1}) + \Theta_j^l$$



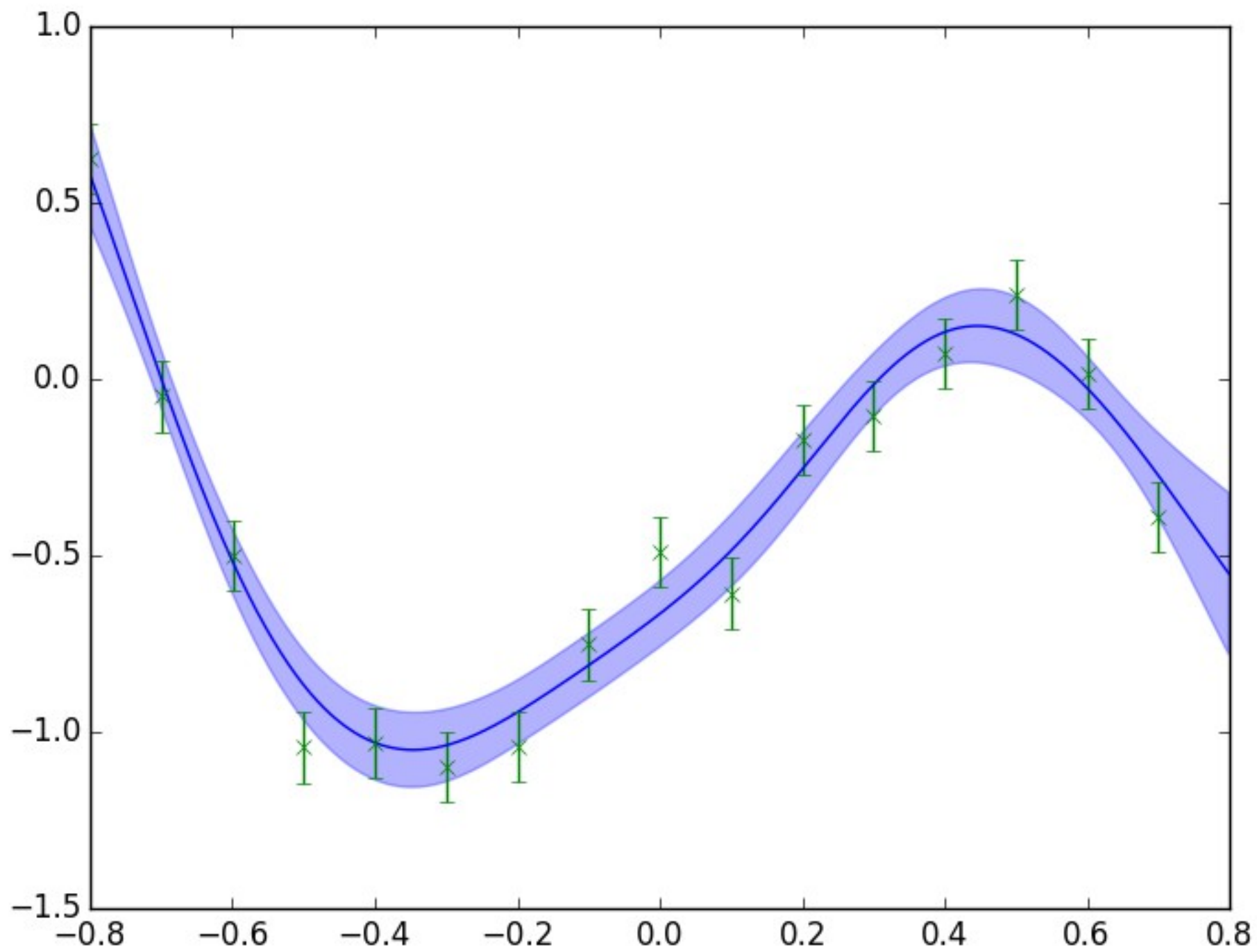
What are
artificial (feed forward)
neural networks?

Obvious concerns !



Obvious concerns !

... have solutions



Cosmology

Cosmology

$$\mu_B = m_B^{\text{corr}} - M_B = m_B^{\text{max}} + \alpha \cdot x_1 - \beta \cdot c - M_B$$

$$\chi_{\text{stat}}^2 = \sum_{\text{SNe}} \frac{[\mu_B(\alpha, \beta, M) - \mu(z; \Omega_M, \Omega_w, w)]^2}{\sigma_{\text{ext}}^2 + \sigma_{\text{sys}}^2 + \sigma_{\text{lc}}^2}$$

