Rectified Linear Unit ($\mathrm{ReLU}(x) = \max(0, x)$) and Sigmoid ($\sigma(x) = 1/(1 + e^{-x})$) are common functions for introducing non-linearity in modeling approaches. These functions are implemented in a numerically stable way in many libraries, including JAX, which is used by hbmep. Eqns. 4.2.5-4.2.8 describe how hbmep implements the activation funtions in Eqns. X-Y as composition of these functions.

Rectified-logistic	$x \mapsto L - l + (H + l) \cdot \mathrm{ReLU}(\sigma(b(x - a) - \ln(H/\ell)))$	(4.7.1)
Logistic-5	$x \mapsto L + H \cdot \{\sigma(b(x - a) - \ln(2^v - 1))\}^{\frac{1}{v}}$	(4.7.1)
Logistic-4	$x \mapsto L + H \cdot \sigma(b(x - a))$	(4.7.2)
Rectified-linear	$x \mapsto L + \mathrm{ReLU}(b(x - a))$	(4.7.3)