Radial Basis Function

(Girosi, Jones, Poggio 1991)

We *approximate* a mapping function from parameter space x to correspondence space y using a *radial basis function* with *Gaussian centers*:

$$\boxed{\vec{y} = \sum_{i=1}^{N} c_i G(\|\overline{x} - \overline{x}_i\|)}$$

where

$$G(x) = e^{-\frac{x^2}{2\sigma^2}}$$

which can be re-written as

$$\boxed{\vec{y} = \sum_{i=1}^{N} b_i(\overline{x}) \vec{y}_i}$$