

Notation

Unbolded x represents a single number, \mathbf{x} represents a vector, and \mathbf{X} represents a matrix. A individual element of a vector will be denoted with a subscript and without boldface. For example, the i th element of a vector \mathbf{x} is denoted as x_i . A bold lower-case number with an index such as \mathbf{x}_j represents a particular row of matrix \mathbf{X} .

Symbol	Description
$y \sim p(y)$	y is drawn from, or distributed according to, distribution $p(y)$
$\mathcal{O}(\cdot)$	The big-O asymptotic complexity of an algorithm.
$A \otimes B$	The Kronecker product of matrices A and B .
SE	The squared-exponential kernel, also known as the radial-basis function (RBF) kernel, or the Gaussian kernel.
RQ	The rational-quadratic kernel.
Per	The periodic kernel.
Lin	The linear kernel.
WN	The white-noise kernel.
C	The constant kernel.
σ	The changepoint kernel, $\sigma(x, x') = \sigma(x)\sigma(x')$, where $\sigma(x)$ is a sigmoidal function such as the logistic function.
$k_1 + k_2$	Addition of kernels, shorthand for $k_1(\mathbf{x}, \mathbf{x}') + k_2(\mathbf{x}, \mathbf{x}')$
$k_1 \times k_2$	Multiplication of kernels, shorthand for $k_1(\mathbf{x}, \mathbf{x}') \times k_2(\mathbf{x}, \mathbf{x}')$
$k(\mathbf{X}, \mathbf{X})$	The Gram matrix, whose i, j th element is given by $k(\mathbf{x}_i, \mathbf{x}_j)$.
\mathbf{K}	Shorthand for the Gram matrix $k(\mathbf{X}, \mathbf{X})$
$\mathbf{f}(\mathbf{X})$	A vector of function values, whose i th element is given by $f(\mathbf{x}_i)$.
$\text{vec}(\mathbf{X})$	The vectorization operator, which concatenates each column of \mathbf{X} into a column vector.
$\text{mod}(i, j)$	The modulo operator: the remainder after dividing i by j .