

# R documentation

## of 'covNoise.Rd'

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covNoise

*Independent noise function.*

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### Description

Independent covariance function, ie "white noise", with specified variance.

This covariance function is parameterized as:  $k(x^p, x^q) = s2 * \text{solve}(\text{delta}(p, q))$ , in which  $s2$  is the noise variance and  $\text{solve}(\text{delta}(p, q))$  is a Kronecker delta function where is 1 if  $p == q$  and its zero otherwise. hyperparameter and is defined by:  $\text{loghyper} = [ \log(\text{sqrt}(s2)) ]$

### Usage

```
covNoise(loghyper= NULL , x = NULL , z = NULL, testset.covariances= FALSE)
```

### Arguments

loghyper	loghyper is hyperparameter vector variable.
x	Input parameter array to define the function over.
z	Index number of loghyper vector.
testset.covariances	Logic value to decide to compute testset covariances or not.

### Value

If  $z$  is not null and `testset.covariances` is TRUE this function calculates test set covariances and if its FALSE the function computes derivative matrix. When `covNoise` is called without parameters is reports the minimum number of parameters other than `loghyper` which it can accept. The output of this function is a list consisting variables `A` and `B`. `B` will include testset covariances calculation when `testset.covariances` is TRUE.

**Author(s)**

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**References**

Carl Edward Rasmussen and Christopher K. I. Williams. Gaussian Processes for Machine Learning. *MIT Press*, 2006. ISBN 0-262-18253-X. Carl Edward Rasmussen & Hannes Nickisch. gpml(GAUSSIAN PROCESS REGRESSION AND CLASSIFICATION Toolbox) Matlab Library.

**Examples**

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params= covNoise()  
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