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| <code>getCovMat</code> | <i>Create a covariance matrix.</i> |
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Description

`getCovMat` returns a covariance matrix (with nugget).

Usage

```
getCovMat(V, R, sig2eps)
```

Arguments

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|----------------------|---|
| <code>V</code> | A positive vector of length n . |
| <code>R</code> | An $n \times n$ correlation matrix. |
| <code>sig2eps</code> | A positive scalar representing the noise. |

Details

This creates a covariance matrix, C , where

$$C = V^{0.5} R V^{0.5} + \sigma_{\epsilon}^2 I$$

where V is a matrix with variances on the diagonal. In the `bcgp` setting, R is a correlation matrix resulting from `combineCorMats`, V is a vector of process variances, and `sig2eps` is the variance of the noise.

Value

An $n \times n$ covariance matrix

See Also

Other correlation and covariance functions: `combineCorMats`, `getCorMat`

Examples

```
n <- 10
d <- 2
x <- matrix(runif(n * d), nrow = n, ncol = d)
rho <- runif(d, 0, 1)
R <- getCorMat(x, rho)
sig2eps <- 0.01
V <- rlnorm(n, -0.1, 0.1)
getCovMat(V, R, sig2eps)
```