

```
function r = raylrnd(b,varargin)
%RAYLRND Random arrays from the Rayleigh distribution.
% R = RAYLRND(B) returns an array of random numbers chosen from the
% Rayleigh distribution with parameter B. The size of R is the size of
% B.
%
% R = RAYLRND(B,M,N,...) or R = RAYLRND(B,[M,N,...]) returns an
% M-by-N-by-... array.
%
% See also RAYLCDF, RAYLINV, RAYLPDF, RAYLSTAT, RANDOM.

% RAYLRND uses a transformation method, expressing a Rayleigh
% random variable in terms of a chi-square random variable.

% Reference:
% [1] Evans, M., Hastings, N., and Peacock, B. (1993) Statistical
% Distributions, 2nd ed., Wiley, 170pp.

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if nargin < 1
    error('stats:raylrnd:TooFewInputs','Requires at least one input argument.');
```

end

```
[err, sizeOut] = statsizechk(1,b,varargin{:});
if err > 0
    error('stats:raylrnd:InputSizeMismatch','Size information is inconsistent.');
```

end

```
% Return NaN for elements corresponding to illegal parameter values.
b(b < 0) = NaN;

% Generate chi-squared 2 d.f. random values and take their sqrt.
r = sqrt(randn(sizeOut).^2 + randn(sizeOut).^2) .* b;
```