marswrmx is a Matlab callable function of fortran subroutine MARSWR which is Fehlner's MARCUM fortran subroutine adapted by L.V. Blake for the RGCALC program.

Probability of detection

Ref.:
NRL Report 7448
A Fortran Computer Program to Calculate the Range of a Pulse Radar
L. V. Blake August 28, 1972

Applied Physics Laboratory Report TG-451
Marcum and Swerling's Data on Target Detection by a Pulsed Radar
Fehlner, L.F. July 1962

Matlab version : 2022a update 7

Fortran compiler : Intel oneapi 2023.2.0 (ifort)

Operating system : Mac OS Monterey v. 12.6.8

marswrmx	**marswrmx**					
Input array	**Output array**	**Data type**	**Fortran/mex variable**	**Parameter description**	**Value**	**Note**
x(1,1)	y(1,1)	Real	SNDB	Signal-to-Noise Ratio (dB)		
x(1,2)	y(1,2)	Integer	N	Number of Pulses Integrated	> 0	
x(1,3)	y(1,3)	Real	FA	False-Alarm Probability (Negative Power of Ten)	> 0	
x(1,4)	y(1,4)	Integer	KASE	Swerling Fluctuation Case	0-4	
	y(2,1)	Real	PN	Probability of Detection		
	y(2,2)	Real	YB	Bias level		
	y(2,3)	Integer	*IERR*	Error flag - Fortran MARSWR input paramaters range error	0-1	0 = no error 1 = Input parameter range error (PN, FA or KASE)