

D.A. CHERNOMORETS

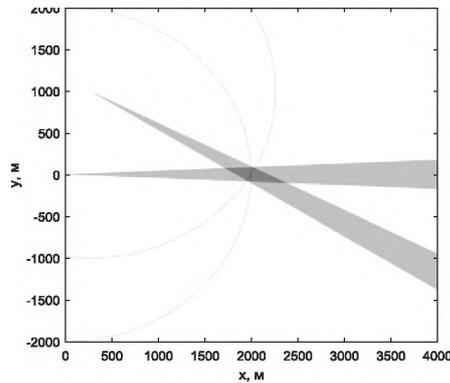
### ON THE TRAJECTORY OF RADAR MOVEMENT WHEN SEARCHING THE OBJECTS

*Radar tools are widely used to determine the search area of objects. In this work we solve the problem of constructing a search trajectory based on a sequential reduction of the search area using a single radar, which can determine the range of the object and its bearing.*

*Keywords: object searching, trajectory, sounding, radar measurements.*

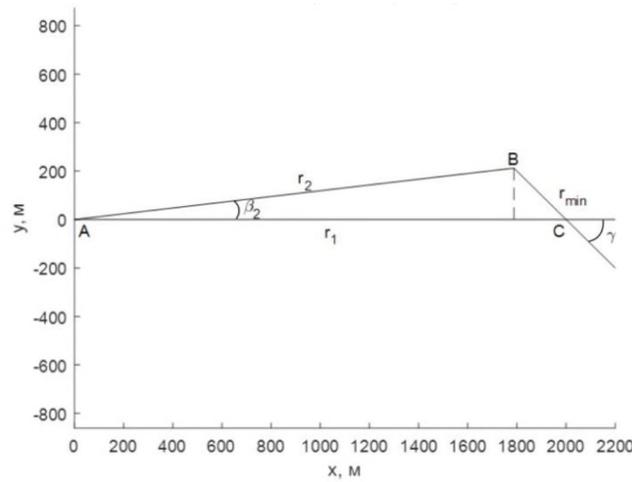
[1-3].

30° ( 1).



I -

1. ( )
2. ( )  $i = 0^\circ$ .  $5 \times 1$ .



2. ( )  $\alpha_2$  (2), « - » ,  $\alpha = 30^\circ$ :

$$P_i = a^{ctg} - r_1 - r_{min} \cos \gamma \quad (1)$$

$$r_2 = \frac{P_i}{\sin \beta_2} \quad (2)$$

$$= r_{min} \sin \gamma \quad (3)$$

3.  $r_2$  ( ) (  $P_i$  )
4.  $W_i$   $W_i$
5.  $S_2$  ( )  $W_2$ .

$r^*$ ,

$$r^* = r_2 + r_{min}. \tag{4}$$

$t^*$  ( , )

:

$$t^* = r^*/V_q, \tag{5}$$

$V_q$ -

( ).

$$r_{min} = 300 ,$$

$$Ar = 2 ,$$

$$= 5^\circ .$$

$$= 30^\circ ,$$

$$- V_q = 50 / .$$

$$r^* = 10\,000 ,$$

$W$ ,

(

3),

(

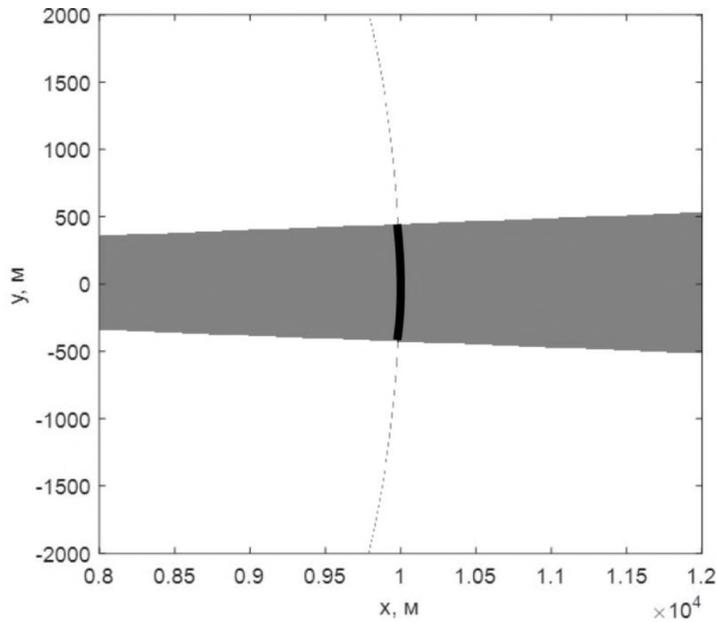
(

3), . .

$$2Ar$$

):

$$= 3699,8 \text{ }^2 .$$



3 -

(1)-(3)

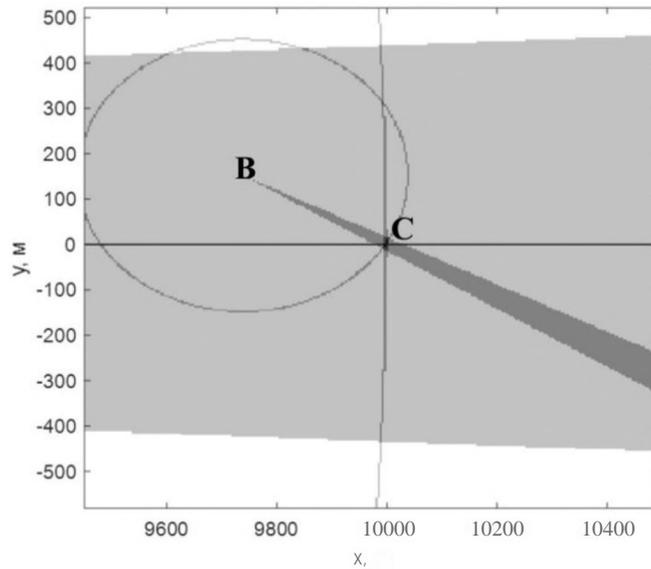
( 2)

:

$$\alpha_2 = 0,88^\circ .$$

$$r_2 = 9741,3 .$$

( , 4):  
 $S_2 = 61,15$

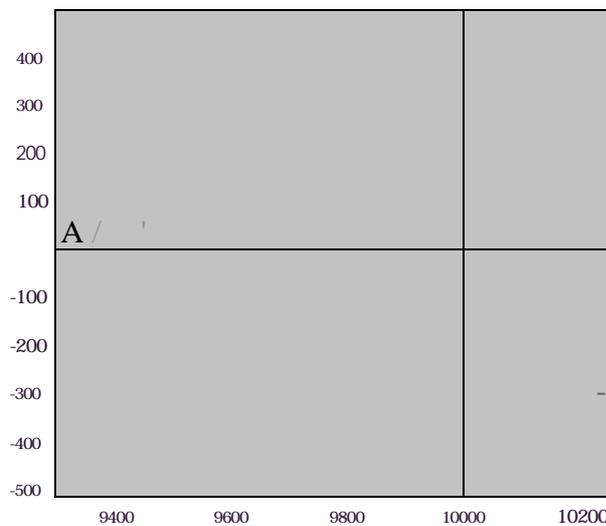


4 -

( ) :  
 $t^* = 10041,3$   
 ( ) :  
 $t^* = 200,826$

( ), D  $r_m \wedge n$

( 5):  
 $S_2 = 122,3$   
 ( ) :  $t^* = 10\ 000$   
 ( ) :  $t^* = 200$



5 -

( ) ( 4),  
 ( 4) ( 5),  
 ( 5), ( 1,004 ) ,  
 2,  
 2 ,

1. . . . . - . : . . . , 1977. - 334 .
2. . . . . // . . . . . , 2017. - 2 (187). -
- .185-197.
3. . . . . // , 2004. - 4. - . 1.

.: +7 (4722) 301300 \* 2175  
 E-mail: daria013ch@yandex.ru