

ABSTRACT

METHOD FOR ESTIMATING THE ELEVATION ANGLE OF A BALLISTIC PROJECTILE

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The present invention relates to the implementation of a method enabling precise determination of the elevation of a projectile following a ballistic trajectory by means of information provided by a conventional Doppler surveillance radar.

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The method according to the invention consists in calculating first the estimate $\hat{\Gamma}_p$ of the value of the radial component Γ_p of the acceleration of the projectile from the quantities $\dot{d}$ and $\ddot{d}$, respectively representing the first derivative and the second derivative with respect to time of the Doppler velocity d of the projectile, then calculating the estimate $\hat{V}$ of the speed V of the projectile from d , $\dot{d}$ and $\hat{\Gamma}_p$, and finally calculating the estimate $\hat{E}$ of its angle of elevation E from d et $\hat{V}$.

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The method according to the invention applies in particular to the protection of sensitive areas against the firing of ballistic projectiles.

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Figure 3