

## عنوان مقاله:

بهبود پردازش و افزایش دقت استخراج برد در یک رادار FM/CW

## محل انتشار:

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## خلاصه مقاله:

The low altitude primary search radar use a continuous wave, and in its simplest case, a sawtooth modulation is used in one scan and no modulation in the next one. By determining the frequency of the returning signal in two consecutive scans, the target range and radial velocity are extracted. In this method, the two successive scans are needed to determine the range and this is one of the main problems of this method. In order to simultaneously extract the radial velocity and the range, the modulating waveform is changed to a triangular wave form, and simultaneously two preprocesses are proposed to compensate for the spectral spreading by sampling and smoothing the returning signal. This has a significant effect in determining the exact components of the target in the low signal-to-noise conditions. Also, a simple algorithm is proposed to determine the coupled frequency components of the target in the pre-processed spectrum more accurately. The processing was done by using a TMS320C6416 DSP processor on an actual radar signal. The experimental results show a higher stability and less error in determining the range compared to other methods.

## کلمات کلیدی:

Sawtooth modulation, Triangular modulation, Spread distribution, Preprocessing, Smoothing spectrum, Range extraction

## لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/966386>

