Abstracts

A Half Century of Radar

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As the IEEE celebrates its 100th anniversary, the practitioners of radar look back on fifty years of progress in their specialized field. Although microwave radar has been the dominant concern for most of this period, the earliest efforts and some of the most recent have used other regions of the spectrum-metric and now micrometer wavelengths. The evolutionary development of radar can be traced through this half century, punctuated by several major innovations in techniques and components: the microwave magnetron, high-power klystron and Amplitron transmitting tubes, coherent signal processing, monopulse tracking, pulse compression, electronically steered arrays, digital processing and control, and solid-state microwave devices. By comparing the appearance and performance of typical radar systems developed before and after each of these innovations, we can see how they have affected the art of radar, and we may also be able to predict what future developments will bring to this ever-changing field.

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