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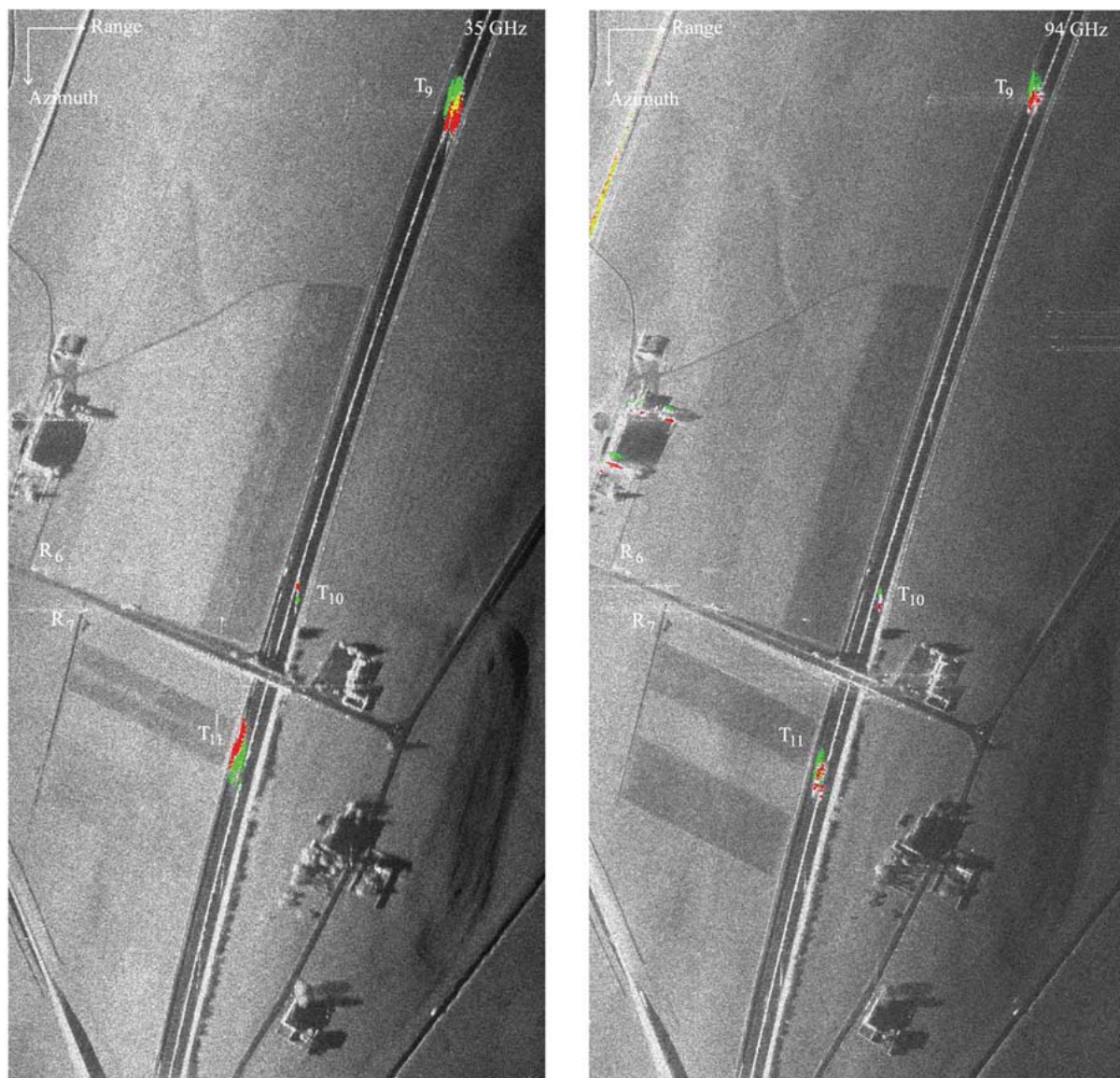
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Ground moving target indication with the 35- and 94-GHz dual-frequency millimeter wave SAR system MEMPHIS. Automatic indication of moving targets T_9 to T_{11} moving on a freeway, with detection (red) and position correction (green) done directly in the SAR image.

The image dimensions are $500 \times 1000 \text{ m}^2$ with a resolution of 0.75 m.

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About the Cover: For a millimeter wave (mmW) synthetic aperture radar (SAR), amplitude-comparison monopulse is an effective ground moving target indication (GMTI) technique with multiple channels sharing a single phase center. The basic concept is well-known from tracking radar applications and directly transferable to SAR GMTI scenarios. Processing of monopulse data results in Doppler deviations of moving targets from the static scene. These deviations are automatically detected in the SAR images (red), and position shift corrections are possible (green). Because Doppler deviations become large for high carrier frequencies, the mmW SAR MEMPHIS uses a dual-frequency approach at (left) 35 and (right) 94 GHz, allowing target Doppler ambiguities and blind speeds to be resolved for an accurate radial velocity measurement. For more information, please see “Capabilities of Dual-Frequency Millimeter Wave SAR with Monopulse Processing for Ground Moving Target Indication,” by Rügge *et al.*, which begins on page 539.