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Carbon fiber assisted glass fabric composite materials for broadband radar cross section reduction

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Abstract:

Carbon fibers (CFs) have been widely used as absorbing materials for radar cross section (RCS) reduction. Here, an alternative approach for CFs is proposed to achieve the same goal and has been performed by the glass fabric composites loaded with a small number of CFs. The reduction mechanism of our proposal is phase cancellation instead of absorption. Two prototypes in chessboard and random patterns are analyzed numerically and measured experimentally. The short CF yarns are designed as the patterned configurations and embedded into the composite surface layers. It is

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