Abstracts

System Aspects and Design of an Automotive Collision Warning PN Code Radar Using Wavefront Reconstruction

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A collision avoidance system for automobiles to be used in freeway and similarly structured traffic environments is under study at the Technische Universitat Munchen (TUM). In priucipIe a two-dimensional imaging problem has to be solved, because the mere detection of objects in front of a vehicle is not sufficient as potential paths of collision can only be recognized by assigning objects to their surroundings. While digital wavefront reconstruction is used for angular discrimination, a high resolution pseudonoise code radar applying a binary phase modulation to a continuous carrier has been implemented for longitudinal (range) resolution. As the system has been designed as an experimental platform rather than a prototype, provisions for recording and evaluation of online radar data have been implemented. The paper reports on concepts, the state of realization and on first experimental results.

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