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Cross-Layer Design of Event-Triggered Adaptive OFDMA Resource Allocation Protocols with Application to Vehicle Clusters

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Abstract : We propose an event-triggered algorithm for the solution of a distributed optimization problem by means of the projected subgradient method. Thereby, we invoke an OFDMA resource allocation scheme by applying an event-triggered sensitivity analysis at the access point. The optimal resource assignment of the subcarriers to the involved wireless nodes is carried out by considering the sensitivity analysis of the overall objective function as defined by the control of vehicle clusters with respect to the information exchange between the nodes.

Keywords : consensus, cross-layer, distributed, event-triggered, multi-vehicle, protocol, resource, OFDMA, wireless
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