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In this work, we focus on reduced order modeling (ROM) techniques for hyperbolic conservation laws with application in uncertainty quantification (UQ) and in conjunction with the well-known Monte Carlo sampling method. The aim is to reduce drastically the computational cost of CFD algorithms. Because we are interested in model order reduction (MOR) techniques for unsteady non-linear hyperbolic systems of conservation laws, which involve moving waves and discontinuities, we explore the parameter-time framework and in the same time we deal with nonlinearities using a POD-EIM-Greedy algorithm (M. Drohmann et al. SIAM SISC, 34 (2012), pp. A937–A969.) We provide under some hypothesis an error indicator, which is also an error upper bound for the difference between the high fidelity solution and the reduced one (Received August 24, 2018)