

STABILITY OF RELAXATION MODELS FOR CONSERVATION LAWS

FRANÇOIS BOUCHUT

Given a hyperbolic system of partial differential equations, a *relaxation model* is another hyperbolic system in higher dimension that contains a relaxation mechanism that forces the solution to approach a manifold, in such a way that a reduced variable approximates the solution of the original, or *relaxed* system. Relaxation models provide structurally coherent approximations that enjoy very nice properties: finite speed of propagation, a priori estimates, entropy inequalities. The stability of these relaxation approximations has been studied a lot in the last years, and I shall describe several notions relevant in this respect. I shall explain in particular how they enable to design well-behaved numerical methods.