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Titolo	Hyperbolic systems of balance laws : lectures given at the C.I.M.E. Summer School held in Cetraro, Italy, July 14-21, 2003 / / edited by Alberto Bressan [and three others]
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Nota di bibliografia	Includes bibliographical references.
Nota di contenuto	BV Solutions to Hyperbolic Systems by Vanishing Viscosity -- Discrete Shock Profiles: Existence and Stability -- Stability of Multidimensional Viscous Shocks -- Planar Stability Criteria for Viscous Shock Waves of Systems with Real Viscosity.
Sommario/riassunto	The present Cime volume includes four lectures by Bressan, Serre, Zumbrun and Williams and an appendix with a Tutorial on Center Manifold Theorem by Bressan. Bressan’s notes start with an extensive review of the theory of hyperbolic conservation laws. Then he introduces the vanishing viscosity approach and explains clearly the building blocks of the theory in particular the crucial role of the decomposition by travelling waves. Serre focuses on existence and stability for discrete shock profiles, he reviews the existence both in the rational and in the irrational cases and gives a concise introduction to the use of spectral methods for stability analysis. Finally the lectures by Williams and Zumbrun deal with the stability of multidimensional fronts. Williams’ lecture describes the stability of multidimensional viscous shocks: the small viscosity limit, linearization and conjugation, Evans functions, Lopatinski determinants etc. Zumbrun discusses

planar stability for viscous shocks with a realistic physical viscosity, necessary and sufficient conditions for nonlinear stability, in analogy to the Lopatinski condition obtained by Majda for the inviscid case.