Regularity and entropy dissipation for the relativistic Vlasov–Maxwell system

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Résumé

In this talk we study the link between the regularity and entropy dissipation of solutions of a vlasovian plasma, which is a non-dissipative hamiltonian system. More precisely we present an Onsager type conjecture on conservation of energy and entropies of weak solutions to the relativistic Vlasov–Maxwell equations. As concerns the regularity of weak solutions, say in Sobolev spaces, we determine Onsager type exponents that guarantee the conservation of all entropies and the validity of the renormalization property. In particular, we obtain Onsager type exponents that are smaller than the famous Onsager exponent 1/3 established for anomalous dissipative solutions of the incompressible Euler equations.

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