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Title: Lagrangian Structure of Vlasov-Maxwell system.

Abstract: In this talk, we explore the existence of a suitable notion of flow for the Vlasov-Maxwell system, and equivalence between Lagrangian solutions, i.e., the transport of the initial condition by its flow, distributional solutions, and renormalized solutions. Moreover, we discuss the existence of renormalized solutions and physically suitable conditions for global well-posedness of such flow, namely, boundedness of initial energy.

This is a joint work with my PhD advisor Prof. Marcelo Santos, extending results provided by Ambrosio, Colombo, and Figalli for Vlasov-Poisson equation and Borrin-Marcon for relativistic Vlasov equations.