Small data global existence for plasma physics models

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Abstract. Basic models of plasma physics couple the compressible Euler equation with an electrostatic or an electromagnetic field, giving respectively the Euler-Poisson or the Euler-Maxwell equation. I will review recent advances on the small data global existence problem, and describe results obtained in collaboration with Nader Masmoudi and Benoit Pausader. The proofs rely on a combination of the space-time resonance and energy estimates methods.