Generalized approach to variational and Hamiltonian kinetic-Maxwell plasma theory. CESARE TRONCI, ALEXANDER CLOSE, University of Surrey — Hamiltonian and variational techniques have proved particularly helpful for constructing new kinetic and hybrid plasma models. Here, we present a geometric construction that relates these approaches for a generalized kinetic-Maxwell theory, producing Lagrangian and Eulerian variants. We then present a particular specialization, in which the well-known Maxwell-Vlasov theory is shown to emerge under appropriate choices of symplectic form and energy function.

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